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67



**ADRIANA
SPAZZOLI.**
*Realta Mapei
International's*
Editor-in-Chief.

Feeling good, feeling at home

It does not matter how old you are or what your cultural background, race or religion is, everybody dreams of owning their own "home". That applies equally to people who do not have one, because it has been destroyed in a war or by some natural disaster, and those who are planning to extend or improve the one they already have. That is because a home is not just a shelter, it is a special place to be shared with our loved-ones and the very symbol of safety, if only provisionally. That explains why a home is one of the most important financial and emotional investments a person makes in their entire life and so it is of great value. Its value extends to both its intrinsic properties - such as the scope and quality of the materials it is built from - and also those more intangible qualities that make it a symbol of social status.

There are thousands of ways of living in and interpreting a home, making it an investment that must last. But viewed from a different perspective, all those other places that accommodate us, such as hotels, congregation places, sports facilities and places of worship, are also "homes".

Flicking through the pages of this issue of *Realta Mapei International*, it is immediately obvious that Mapei works on every front to ensure that the place we find ourselves in is always "home" for us, a high-quality place where it is nice and normal to feel at "home". This is, of course, a virtual journey seen through the very distinctive eyes of Mapei, a company that operates all over the planet, with no cultural or religious barriers, respecting local traditions, and adapting to all the great changes in our rapidly evolving world.

So, it is obvious that for Mapei being a leading player in global building means interacting with the present-day world to provide concrete solutions to specific demands.

Hence Mapei's "building well-being" encompasses all the different stages in construction work: dehumidification, waterproofing, insulating, protecting and decorating.

Mapei provides special solutions for each of these separate phases and the idea of well-being does not end there, but even encompasses the quest for balance and sustainability, which, together with the conservation of available resources, is the biggest challenge of this millennium.

As we can see reading through this issue of our magazine, Mapei is engaged in improving the state of our homes and well-being of their inhabitants, the socio-economic balance and environmental protection. It is involved in the construction of buildings capable of reducing environmental impact, partly through optimising construction and maintenance costs.

And if, as we have seen, people have always attached the utmost value to their home, then constructing new buildings today means being aware of the world's need and renovating and redeveloping existing buildings means preserving past traditions and cultures. Comfort and well-being to "really feel at home" and live responsibly in the present day, which is already our future.

Enjoy your reading

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COVER STORY

"Perfect strangers", a group of
mosaics of everyday people,
adorns the station of 72nd Street,
the first new station along the
Second Avenue Subway. They
were created by the artist Vik
Muniz and completed using
Mapei products (see pg 6-9).



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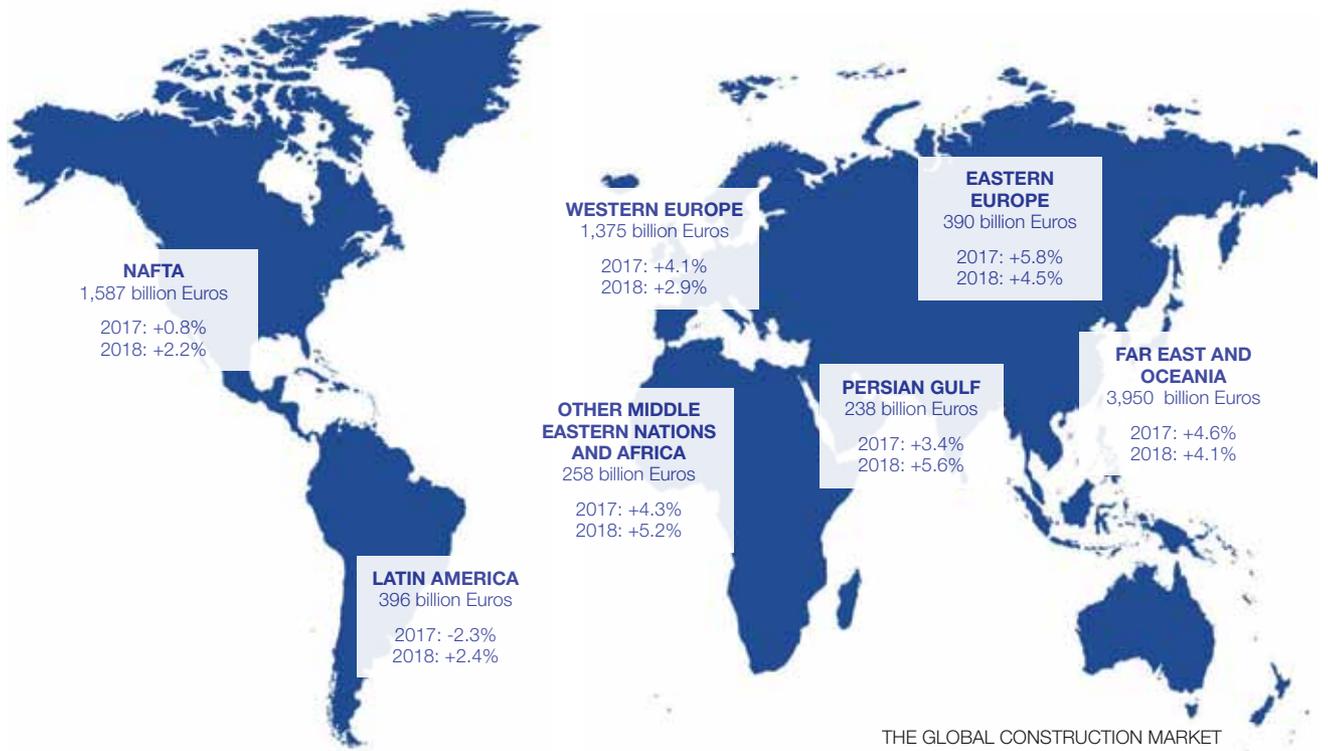


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THE GLOBAL CONSTRUCTION MARKET
Investment figures for 2017 and estimate of variations compared to the previous year.

Information source: Prometeia, December 2017

THE GLOBAL CONSTRUCTION INDUSTRY IS GROWING STRONGER

EUROPE IS RECOVERING, NATIONS IN THE PERSIAN GULF AND FAR EAST ARE DOING WELL

Last year over 8200 billion Euros were invested in the construction industry, corresponding to an estimated increase of 3.4% compared to 2016. The overall trend in the building market in 2017 was similar to that of the global GDP, which the International Monetary Fund (IMF) estimated as having increased by 3.6%. The graph above shows the figures for construction investments in various regions and the variations forecast from 2017 and 2018.

WESTERN EUROPE

Investment growth in the construction industry in 2017 were the highest for a decade in Western Europe, exceeding 4%; there has been an even more positive trend in the housing industry with investments estimated at having exceeded 5%. This area, which saw its slice of the global building market drop considerably until 2016, has now increased to approximately 18%, according to estimates. The construction

market has grown much more than the local economy, whose growth rate is estimated at 2.1%. The building industry is expected to carry on expanding this year at a growth rate estimated at approximately 3%, while the region's GDP is expected to increase by approximately 2%. Last year five of Western Europe's leading markets benefited from increasing investments in building. The German market was the most dynamic, with building output increasing by an estimated 4.7%. It was the housing industry that was the main driving force behind the German building industry with investments increasing by over 5%. The forecast for the German construction industry is positive and is expected to rise by approximately 3.5% in 2018, twice the growth expected for the nation's GDP.

The French building industry grew by an estimated 3.4% in 2017 and, once again, it was housing that provided the biggest boost to the building market, growing by 5%. The building industry was one of the most positive aspects of the French economy, which grew by 1.6%, according to the IMF. France's GDP is expected to grow at the same rate in 2018, while there is expected to

» Investments in the building industry in 2017 were the highest for a decade in Western Europe, exceeding 4%

be much more dynamic growth in building investments that are estimated at 3.6%.

The Italian construction industry grew at the rather slower rate of approximately 1% in 2017. The building industry underperformed compared to the overall economy: indeed, the GDP increased by 1.5%. A slight improvement in the state of the building industry is expected in 2018, when investments could, in fact, increase by 1.6%. In contrast, the national economy's growth rate is expected to slow down and will settle at around 1% this year.

The Spanish building industry continued to boom in 2017 and enjoyed investments of over 4% last year. The housing industry was the most dynamic, growing very rapidly at an estimated figure of approximately 7%. Forecasts for 2018 indicate further strong growth in the Spanish building industry, which should reach 3.8%, much higher than the Spanish GDP that is expected to grow by 2.5%.

Despite concerns connected with Brexit, the British building industry performed extremely well in 2017 and closed with an increase in investments of 4%, falling perfectly in line with the continental average. This growth in the building industry compares favourably to the nation's overall economic growth of 1.7%. Whereas the GDP is not expected to vary much in 2018, the building industry is, on the other hand, expected to slow down considerably. With an expected growth rate of less than 1%, it will be the worst performing of all Western Europe's building industries.

EASTERN EUROPE

Last year there was a real revival in economic growth in this region (+3.2%), benefiting from Russia coming out of its recession and also the fact that the main economies in the region performed



well, particularly Poland, Turkey and the Czech Republic. In this favourable macro-economic setting, building has grown at the incredibly fast rate of almost 6%. The Russian building industry has grown less rapidly at a rate of somewhere between 1 and 2%, while the trend on the rest of the main markets has been excellent, partly thanks to a revival in investments in public works helped along by a new round of EU funding. Last year this region's share of the global building industry increased to approximately 5%. Forecasts for 2018 suggest that economic growth in this region will continue: the overall GDP should increase to approximately 3%. Alongside Central-Eastern Europe's well-performing economy, there will also be a revival in the Russian GDP that is expected to grow by approximately 2% this year. Investments in building in 2018 are expected to rise by 4.5% and this should mean that the building market will also continue to expand. The boom in the building industry is expected to be particularly strong in Poland, where investments in building are expected to increase by 9% compared to a growth in the GDP estimated at 3.3%. Overall, the public build-

ing investments are expected to perform particularly well in Eastern Europe, with a less marked increase in the housing industry, except on the Russian market where the housing sector will benefit from better credit due to falling interest rates.

NORTH AMERICA

The North American economy grew overall by 2.3% in 2017. According to the IMF, the American GDP grew by 2.2%, the Canadian by 3% and the Mexican economy by 2.1%. Building investments only increased at a relatively slow rate due to a considerable slowdown in the US construction industry (particularly the housing sector), which, after performing well during the first quarter, certainly slowed down. The growth in the building industry in Canada and Mexico was modest; a positive trend in the housing sector was counteracted by a decline in civil engineering. Overall the North American building industry grew by approximately 1% last year.

The economies of the three nations should grow at slightly slower rates in 2018 compared to 2017. Investments in building are expected to increase

MARKET

by over 2% this year. The demand for housing should support growth in the residential building industry in the USA and Mexico, while the trend in this sector is expected to be lower in Canada due to high levels of family debt and the policy of controlling the property market. Over the last six years (with the exception of 2017), the trend for the building industry in the NAFTA region has been positive and has reinforced its share of the global building market, which is currently estimated at almost 20%.

LATIN AMERICA

The growth in this region's GDP in 2017 was estimated as 0.6%. Brazil and Argentina have come out of economic recession, while the region's other markets have continued to grow at relatively slow rates. Only Venezuela has had to deal with a dramatic fall in GDP. Last year the building industry experienced a slight contraction in investments due to the economic recession in every industry of the Brazilian market and a slowdown in the building industries in Chile and Peru (alongside a further collapse in the industry in Venezuela), only partly compensated for by the revival in the Argentinian construction industry.

The state of the region's economy is expected to improve this year and the area's GDP is expected to rise by ap-



proximately 2%. The Brazilian economy is expected to grow by 1.5%, while the increase in GDP in Argentina and Colombia is estimated at between 2 and 3%. The region's outlook is, however, affected by two risk factors, i.e. possible protectionist measures taken by the US administration and political instability associated with the forthcoming presidential elections in Brazil, which might result in delays in implementing necessary economic reforms. There might be a revival in investments in the building industry in 2018 due to an inversion in trend on the Brazilian market and a strengthening of the Argentinian building industry. The only country whose outlook remains bleak is Venezuela, where political and social unrest will lead to a further collapse in the building industry. The negative trend in the construction market over the last few years has resulted in Latin America's share of the global building market contracting notably. It is estimated that less than 5% of investments in the global building industry came from South America in 2017.

PERSIAN GULF NATIONS

Economic growth in this region was relatively slow in 2017 and estimated at just over 1%. The Saudi economy stagnated due to cuts in oil production and a reduction in public spending. The GDP in the Arab Emirates was estimated as having grown at the relatively low rate of 1.3%, while Iranian economic growth was stronger: +3.5%. The region's main building markets showed different trends in 2017. The construction industry performed modestly in Saudi Arabia, where a cut in public investments in infrastruc-

tures and block on important residential projects had a negative effect on building output. In contrast, investments in building in the Arab Emirates and Iran were increased notably with a markedly positive trend in every sector of the market. It is estimated that the Gulf region's share of the 2017 global building market was approximately 3%.

The IMF expects a definite improvement in the region's economy in 2018: the Gulf area's overall GDP is expected to grow by approximately 3%. There will be a slow revival in growth in Saudi Arabia, whose GDP should increase by over 1%. The Arab Emirates and Iran should have economic growth rates of between 3-4% (although tension with the United States and other countries in the region mean there is more uncertainty concerning Iran). As regards the building industry, the Arab Emirates' market is most likely to grow, driven along by projects planned both in the residential and non-residential sectors in preparation for the forthcoming Expo in Dubai in 2020. If Iran manages to maintain both domestic and international stability, its building industry should be boosted by all the projects planned for the infrastructure and the housing sectors. There is expected to be a slightly positive trend in the Saudi Arabian building market in 2018, due to a partial relaunching of public investments in building.

OTHER MIDDLE EASTERN NATIONS AND AFRICA

The region's main economies showed different trends last year. There was significant growth in Morocco and Egypt, whose GDPs continued to grow at over

» The Far East should help boost the global construction industry over coming years



4% and the Libyan economy also expanded. In contrast, the leading economies in sub-Saharan Africa - Nigeria and South Africa - were less successful with their GDPs continuing to grow at approximately 1%. There was a boom in building in Egypt in 2017, which affected both the housing and infrastructure sectors. The building industry also performed well in Morocco and Israel, while there were signs of the beginning of a reconstruction process in Libya. Overall, it is estimated that investments in construction in the region increased by over 4% in 2017.

The economies of Egypt and Israel are expected to grow at a significant rate in 2018, while Morocco's GDP should slow down slightly. The macroeconomic situation should improve in Nigeria, whose GDP is expected to grow by approximately 2%, while the South African economy should grow more slowly at a rate of approximately 1%. This year the construction industry is expected to expand right across all the region's markets with investments increasing at a rate of over 5%. The most important driver in the growth of the building market is infrastructure, which is also the biggest part of the region's building industry. There will be plenty opportunity for considerable growth in the housing sector connected with the development of urbanisation processes and public building projects.

Africa's construction industry has great potential but, until now, its share of the global building market is still relatively low at an estimated figure of just over 3%.

THE FAR EAST AND OCEANIA

The region's GDP grew at the same rate last year as over the two previous years: around 4.8%. China and India were the main players in the area's economic growth with the IMF estimating that their GDPs grew at 6.8% and 6.7%. Among other emerging economies, the growth rate exceeded 5% in Indonesia and Malaysia in 2017, while it remained above 6% in the Philippines and Vietnam. Asia's main mature economies, Japan and Korea, grew respectively by 1.5% and 3%, while Australia's GDP expanded by 2.2%. There was a marked



increase in investments in the building market in 2017, one of the world's highest at 4.6%.

Estimates for 2018 suggest a slight slowdown in China's economy, due to less public spending on the economy. This year's GDP in India should, on the other hand, rise by over 7%, partly thanks to reforms implemented by the government and a boost in investments. The outlook is also positive for the for the Far East's other emerging economies. As regards the region's mature economies, steady growth at approximately 3% is expected in Korea and Australia, while Japan's economy is expected to slow down and grow at around 0.7%. The overall rate of construction investments in the region in 2018 is estimated at approximately 4% and should, therefore, be lower than last year's figure.

The region's overall performance will be affected by a gradual slowdown in every sector of the Chinese building industry, most notably housing. New housing will

be penalised by action aimed at controlling credit and measures taken to slow down the property market to avoid speculation bubbles. On the other hand, the forecasts are positive for India, Indonesia and Malaysia, where investments in infrastructures and the demand for new housing should support growth in the building market.

The Far East and Oceania include six of the world's most important building markets. China, Japan, India, Australia, Indonesia and South Korea are, in fact, ranked among the top 15 construction markets. Overall, the region accounts for 48% of global output in the building trade. The outlook for the area is positive and the Far East should, therefore, continue to be the leading player on the global building market and help boost the global construction industry over coming years.

Francesco Doria. Market Research Manager, Mapei SpA (Italy)

PROJECTS **INSTALLATION OF CERAMIC TILES AND MOSAICS**



The New York City subway is one the world's most used and longest metro systems.





MOSAICS IN THE NEW YORK SUBWAY

“PERFECT STRANGERS”, A GROUP OF MOSAICS OF EVERYDAY PEOPLE, ADORNS A NEW STATION ON THE SUBWAY

On Saturday, December 31st, 2016, the Mayor of New York, Bill de Blasio, and the Governor of New York, Andrew Cuomo, together with hundreds of passengers who were simply curious, inaugurated the first section of the new stretch of the New York subway, the Second Avenue Subway.

At a cost of more than four billion US dollars, this has been the most ambitious project undertaken for the New York subway in recent years. It is an extension to the Q Line which connects the Upper East Side district to Coney Island and Brooklyn. The line has been extended by almost two and a half kilometres and currently has four new stops: 63rd, 72nd, 86th and 96th Street, after which it connects to a stop that was already in use. The next phase, now in the planning stage, will see the line being extended right up to 125th Street in East Harlem.

The project was first proposed in 1920 but had been repeatedly interrupted and postponed. The actual work on the project officially started in 2007 and was completed at the beginning of 2017.

The New York subway is one of the most heavily congested in the world and carries an average of round 5.6 million passengers every day, with this particular used by more than 200,000 commuters on a daily basis.

ART AND TECHNIQUE FOR THE WALL MOSAICS

On the first day of the New Year, passengers taking the subway had the chance to admire the works of art that adorn the

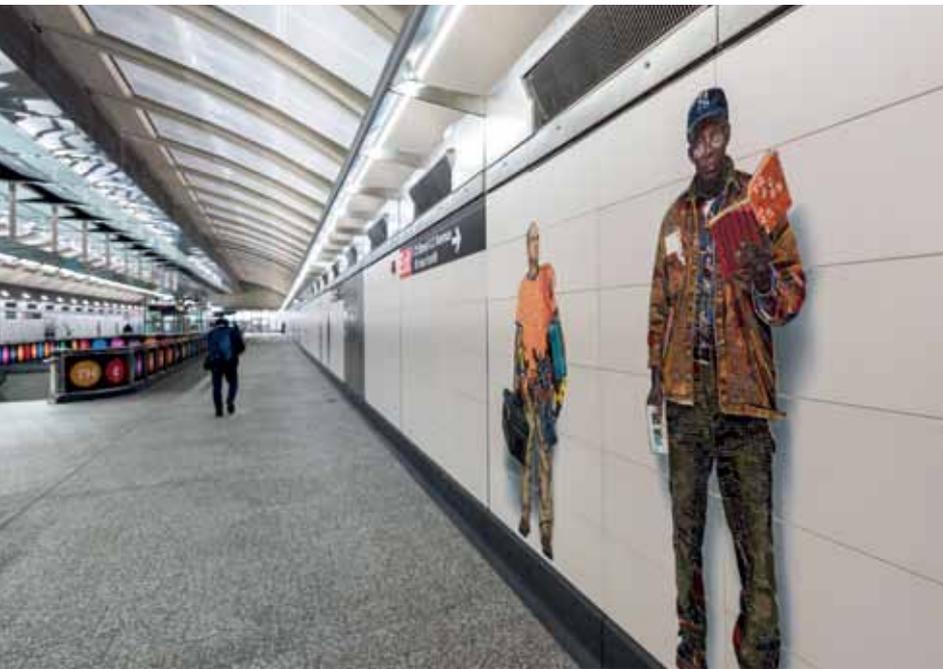
walls of the new stations.

They were created by four different artists and each station has a different theme: Lexington Avenue-63rd Street Station is enriched with the “Elevated” series of mosaics by the artist Jean Shin; the walls of 86th Street are decorated with “Subway Portraits” by Chuck Close; and 96th Street, the last stop along the line, has been illustrated with blue porcelain for the “Blueprint for a Landscape” series by Sarah Sze.

72nd Street, the first new station along the Second Avenue Subway, is adorned with life-size portraits of “Perfect Strangers”, a series of glass mosaics created by Brazilian-born New York-based artist Vik Muniz to represent the type of people who live, work or wait for the subway in New York. Apart from being an important infrastructure project within the public transport network, the Second Avenue Subway is also a work of public art combining art and transport promoted by A&D-MTA Arts & Design, an association with the aim of encouraging the use of the subway by local residents by offering the chance to live aesthetic experiences through art and design.

The four artists chosen for this project were allowed to let their imaginations run wild on the surfaces assigned to them in the new stations, as if they were blank canvases.

The mosaics were made from ceramic, terracotta and coloured glass tiles, along with other decorative features. The final result was made possible thanks to the use of materials of the highest quality,



72nd Street, the first new station along the Second Avenue Subway, is adorned with life-size mosaic portraits of New Yorkers. Joints were grouted with FLEXCOLOR 3D mortar.

IN THE SPOTLIGHT

GRANIRAPID

It is a two-component adhesive for bonding all kinds of interior and exterior ceramic tiles, conglomerate, artificial and natural stone and marble on walls or floors. GRANIRAPID has particularly fast setting and hydration times so that floors are set to light foot traffic after 3 hours and completely cured after only 24 hours. Its mechanical properties make it resistant to impact, vibration, temperature changes, ageing and dilute chemical agents.



the skill of the craftsmen who actually installed the mosaics and the innovative products used to bond and grout the tiles. To install his glass mosaics in the station at 72nd Street, Vik Muniz recommended using a team of installers from Franz Mayer of Munich, Inc.. This company was founded in 1847 and is still considered to be one of the best at installing artistic and architectural mosaics. The designer and the company chose products proposed by Mapei, among which one particularly worth mentioning is the translucent/iridescent grout FLEXCOLOR 3D. Presented at the 2017 US trade fair Coverings, FLEXCOLOR 3D is a ready-mixed mortar with an iridescent effect finish. The product is offered in 10 different shades with translucent characteristics that not only reflect but also refract light. This allows the grout to transition in color to complement the tile color. It was developed particularly for grouting joints of porcelain tiles, ceramic tiles, natural stone and glass mosaics in commercial or residential areas. It dries in around 24 hours and includes 70% recycled components, which establishes it as meeting the Level 3 criteria of the Green Squared Certification program, further helping to obtain the LEED certification.

The mosaics in the New York subway are the first project in the United States to have used FLEXCOLOR 3D, which

is manufactured and distributed on the USA market by Mapei Corp., the US subsidiary of the Mapei Group.

INSTALLING MOSAICS IN A TUNNEL

Vik Muniz designed the life-sized outlines of the mosaics after working on a series of life-sized photos he had taken. The team from Franz Mayer then worked in the studio to install the glass mosaics on panels using GRANIRAPID two-component cementitious adhesive, which dries quickly so that features may also be put

into service quickly.

Once they had been completed, the panels were transported to the 72nd Street station. Here, the installers cut white porcelain tiles along the platforms using water-jet cutting equipment to form the perimeters of the life-sized murals.

The porcelain tiles had previously been installed on the walls using ULTRAFLEX LFT adhesive while joints were grouted with KERACOLOR U mortar. Both products are manufactured and distributed on the US market by Mapei Corp.

The panels were then bonded in place using GRANIRAPID.

Once the mosaic figures had been put





The glass mosaics were bonded on panels with GRANIRAPID cementitious adhesive.

in the correct position, all joints were grouted with FLEXCOLOR 3D mortar. The artist chose the “Crystal Moon” shade, which is the most translucent of the ten available shades, and is perfect for reflecting and refracting the colours of the surrounding mosaic tiles, taking on different coloration in different parts of each mural.

MAPESIL T 100% silicone sealant, which is also manufactured and distributed on the US market by Mapei Corp., was used to seal expansion joints.

TECHNICAL DATA

Second Avenue Subway Murals, New York (USA)

Period of construction: 2007-2017

Period of the intervention: 2016-2017

Intervention by Mapei: supplying products for installing porcelain tiles and glass mosaics

Design: Vik Muniz

Client: New York City Mass Transit Authority

Main contractor: Judlau

Installation company: Franz Mayer of Munich, Inc.

Mapei distributor: Daltile Brooklyn

Mapei coordinator: Matt Hess, Mapei Corp. (USA)

MAPEI PRODUCTS

Installing and grouting ceramic tiles:

Ultraflex LFT*, Keracolor U*

Installing and grouting glass mosaics:

Granirapid, Flexcolor 3D*,

Sealing expansion joints: Mapesil T*

*These products are manufactured and distributed on the US market by Mapei Corp. (USA)

For further information on products visit www.mapei.com and www.mapei.us



TRADE FAIRS

DOMOTEX 2018



DOMOTEX 2018

global and innovative solutions
for installing LVT, textile, resilient
and wooden floors



As the world's leading trade fair for carpets and floor coverings, Domotex, which took place from the 12th to the 16th of January, once again delivered top performance as a driver of new business, trends and innovations. 1,615 exhibitors and 45,000 trade visitors from over 100 nations traveled to Hannover (Germany) to kick off an exciting year of business. The event sported an all-new site and hall layout, plus a new Friday-to-Monday run and an array of immersive displays exploring the lead theme of UNIQUE YOUNIVERSE. This all added up to optimal visitor orientation and a fresh take on the world of floor coverings.

Mapei, together with its German subsidiary Mapei GmbH, once again took part in the event to display all its systems and products for applying and finishing floor coverings.

The company's presence was very much appreciated by international visitors. Indeed, more than 65% of the event's

45,000 visitors came from abroad: around 60% of them coming from Europe, with some 25% from Asia and 11% from the Americas. Attendance from the United States and South and Central America also increased.

STUNNING INNOVATION

In its updated stand Mapei introduced new products and presented its complete systems for installing resilient (including LVT), textile and wooden floorings. The idea behind the display area was to demonstrate how Mapei products enable these materials to be installed on floors and walls, including large formats, and in a number of different areas of use by staging reproductions of various settings so that visitors could see for themselves the quality of Mapei systems.

Live demonstrations carried out by Mapei professional staff also showed how to use the company's products.

Numerous Mapei products on show at Domotex 2018 have been certified EMI CODE EC1 and EMI CODE EC1 Plus because of their very low emission level of volatile organic compounds (VOC) by GEV, an association that controls emissions from flooring products, adhesives and materials used in the building industry.



UNIQUE YOUNIVERSE

UNIQUE YOUNIVERSE was Domotex 2018's keynote theme putting the focus squarely on today's hot individualization trend: the quintessentially human quest

for individuality amid an increasingly globalized and standardized world. People want products and services that are tailored to their needs and lifestyles and which reflect their own unique personalities. UNIQUE YOUNIVERSE revealed how products and services can best be tailored to customer needs and lifestyles, and what this sweeping trend means for the industry. Hall 9 hosted the Framing Trends display area, which explored and interpreted the UNIQUE YOUNIVERSE theme from four perspectives, each corresponding to a distinct display zone. The Hall 9 lineup also included a stimulating supporting program of talks with industry experts and commentators and daily guided tours of the show.



DOMOTEX 2018



SUBSTRATE PREPARATION

Creating the right flooring which is both reliable and durable can never disregard the importance of creating the most suitable substrate.

Which is why Mapei at Domotex 2018 presented specific solutions, mortars and self-levelling products to help form substrates that comply with various technical and performance requirements, which often vary according to the area of use.

Mapei has extensive and consolidated experience in the preparation of substrates, indispensable for the correct installation of flooring, particularly resilient, textile and wooden flooring. The range of self-levelling smoothing compounds has evolved and been extended over the years by introducing innovative products, similar to what happened to the range of flooring adhesives. At Domotex 2018, two products were highlighted: TOPCEM normal-setting, quick-drying, controlled-shrinkage hydraulic binder for floating and bonded screeds on old and new floor slabs, and TOPCEM PRONTO ready-mixed, normal-setting, quick-drying mortar with high thermal conductivity for floating and bonded screeds, class CT C30-F6-A1, according to EN 13813 standard.

In the self-levelling products sector Mapei proposed PLANEX HR and PLANEX HR MAXI rapid-drying, moisture-resistant smoothing and levelling compounds, which are applied in layers from 1 to 10 mm thick and from 2 to 20 mm thick, respectively, to compensate for differences in thickness in new and old internal and external substrates. Besides, PLANIPREP 4 LVT ready-mixed smoothing and levelling compound for levelling off old ceramic and stone substrates with joints before installing LVT, was also in the spotlight at Domotex 2018.

And lastly, Mapei proposed ULTRAPLAN FAST TRACK self-levelling smoothing compound for levelling off and eliminating

In the self-levelling products range, at Domotex 2018 Mapei proposed PLANIPREP 4 LVT (above) and PLANEX HR MAXI (right).



differences in thickness between 1 and 10 mm on new and old internal substrates to make them suitable for installing all types of flooring, including resilient, textile and multilayered wooden flooring, very quickly (in 2 hours at +23° and 50% R.H.).

SYSTEMS FOR INSTALLING LVT COVERINGS...EVEN IN SHOWERS AND DAMP ENVIRONMENTS

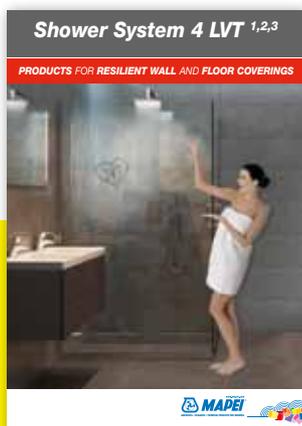
"The intention was to give ideas to our visitors, all highly professional people coming from all around the world. With just one system we demonstrated how many different solutions it is possible to create, to stimulate them into imagining new and other more unfamiliar ones, because with the solutions offered by the Mapei 4 LVT line there is an infinite number of possibilities", declared Angelo Nobili, Mapei Group's Corporate Resilient and Sport Lines Director.

Mapei's consolidated experience in the resilient and waterproofing sectors has enabled the company to develop a family

of dedicated products for installing LVT floor and wall coverings in showers.

Three complete systems for waterproofing substrates and installing LVT in bathrooms and damp environments, made up of various waterproofing systems, along with the innovative ULTRABOND ECO MS 4 LVT WALL adhesive, KERAPOXY 4 LVT grout and MAPECOAT 4 LVT non-slip finish.

Each of the three systems is characterised by its own waterproofing products, in sheet membranes, liquid membranes and cementitious mortars, to meet all the needs of installation work. The cornerstone of all three systems is ULTRABOND ECO MS 4 LVT WALL: the first reactive adhesive that allows LVT to be installed in damp environments. It is a one-component, solvent-free, non-slip, silylated polymer-based adhesive with excellent mechanical properties and high resistance to water.



The line is completed by a new product: KERAPOXY 4 LVT, a two-component, mould-resistant, non-absorbent, easy-to-clean epoxy grout. KERAPOXY 4 LVT is available in six different colours.

For bonding LVT on walls in damp environments Mapei proposes ULTRABOND ECO MS 4 LVT WALL adhesive and the new KERAPOXY 4 LVT grout.



- | | |
|--|---|
| 1 Smoothing compound
<i>Planex HR Maxi</i> | 6 Adhesive
<i>Ultrabond Eco MS 4 LVT/Wall</i> |
| 2 Adhesive
<i>Mapeguard WP Adhesive</i> | 7 LVT |
| 3 Waterproofing membrane
<i>Mapeguard WP 200</i> | 8 Grout for joints
<i>Kerapoxy 4 LVT</i> |
| 4 Waterproofing tape
<i>Mapeguard ST</i> | 9 Non-slip finish
<i>Mapecoat 4 LVT</i> |
| 5 Waterproofing corners
<i>Mapeguard IC</i> | 10 Sealant
<i>Mapesil AC</i> |

**Mapecoat®
Wet&Dry R11 & 4 LVT**



**ANTI-SLIP FINISHES
FOR RESILIENT AND LVT
FLOOR COVERINGS**

**RUTSCHHEMMENDE
VERSIEGELUNGEN
FÜR ELASTISCHE
BODENBELÄGE UND LVT**



**DIN 51130
AS 4586**



**DIN 51097
AS 4586**

In the spotlight at Domotex 2018: MAPECOAT WET & DRY R11, non-slip protective finish for resilient floorings, characterised by high resistance to aggressive chemicals, abrasion and streaks. It is ideal for both civil and commercial environments.

MAPECOAT WET & DRY R11 NON-SLIP FINISH

For the sector of non-slip finished for flooring, this year Mapei introduced MAPECOAT WET & DRY R11, a transparent, protective finish for all types of resilient flooring.

This new product joins MAPECOAT 4 LVT finish to complete the range of non-slip solutions for LVT floor coverings.

Both products are characterised by their high resistance to aggressive chemicals, abrasion and streaks, their ease of application, and their low impact on the well-being of applicators and end users. They are also resistant to UV rays, which means they are not prone to yellowing. They are particularly recommended for civil and commercial settings, including those subjected to intense pedestrian traffic.

Both finishes are non-slip and certified R11 according to DIN 51130 and AS 4586 standards. They are also certified class A+B according to DIN 51097 and AS 4586 for their slip resistance in barefoot conditions.

SYSTEMS FOR INSTALLING RESILIENTS AND TEXTILE MATERIALS IN HOTELS

Over the years, Mapei has developed a complete range of products and integrated systems for installing resilient, LVT and textile floor and wall coverings for use in the hospitality

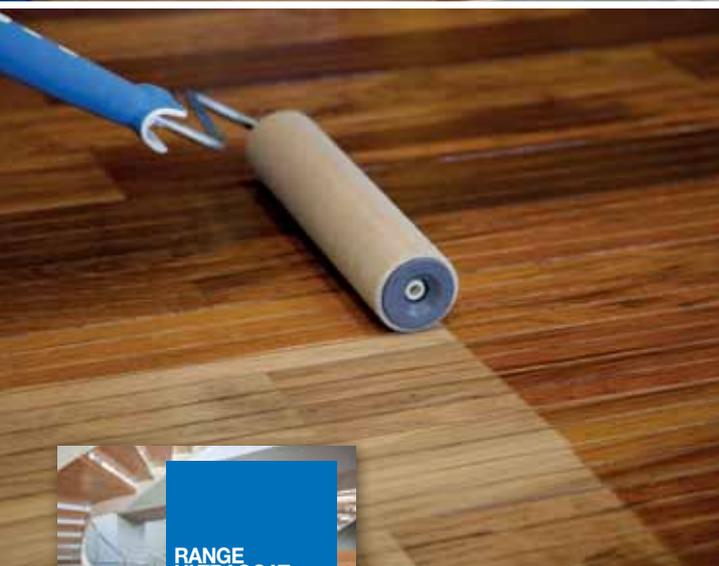
sector, and is renowned for being a reliable partner in the design and execution of the most complex projects.

Thanks to its highly technological products, Mapei has the capacity to play an important role in both the construction of new hotels and in the restoration of existing hotels.

The solutions proposed by Mapei are able to meet the different needs of all the various areas in which they are used: from reception and common areas to kitchens and restaurants, from conference halls to hotel rooms and suites, from bathrooms to wellbeing areas and gymnasiums.

Mapei products and systems also meet the requirements of designers and users: thanks to their Fast Track Ready technology, for example, they allow installation times and disruption caused by site operations to be reduced, they are easy to apply, they may be integrated with each other, and they also guarantee excellent performances.





SOLUTIONS AND SYSTEMS FOR INSTALLING AND FINISHING WOODEN FLOORING

As highlighted by Angelo Giangiulio, Mapei Group's Corporate Product Manager of the line, special attention was also paid to the Mapei products for wooden floors at Domotex 2018.

The proposals offered by Mapei include: ULTRABOND silylated polymer-based adhesives with very low emission level of VOC and exceptional viscosity, workability and ridge holding. This family includes ULTRABOND ECO S968 1K, a one-component, solvent-free adhesive for installing all types of solid and pre-finished wooden flooring on any type of substrate, including heated screeds.

Amongst the other proposals is ULTRACOAT OIL COLOR low-odour urethane oil finish for colouring wooden floors. ULTRACOAT OIL COLOR may be painted over with two-component finishing products from the ULTRACOAT line: 100% water-based, non-yellowing finishes for use in civil and commercial surroundings subjected to medium and intense volumes of traffic, to protect the surface of wooden floors and

provide long-lasting durability.

At Domotex 2018 Mapei also presented a recently introduced product: ULTRACOAT TOP DECK OIL, an oil-based finish for treating external wooden flooring. The oil is available in a natural or teak finish and is used to protect external wooden flooring, such as those around the edges of pools or on terraces, from damage caused by sunlight, deterioration in general and the spread of wood fungi. The natural version leaves wood with its original colour, while the teak version gives wood that classic, golden hue typical of teak.

ULTRACOAT SPORT SYSTEM FOR WOODEN SPORTS SURFACES

Presented at FSB 2017, at Domotex 2018 Mapei again proposed ULTRACOAT SPORT SYSTEM, a water-based finishing system for finishing and colouring wooden sports surfaces. It is made up of the following products: ULTRACOAT PREMIUM BASE water-based basecoat characterised by high insulating properties, excellent defect-hiding properties, easy buffing and ease of application; ULTRACOAT HT SPORT water-based polyurethane finish; ULTRACOAT SPORT COLOR one-component, water-based, coloured acrylic paint for marking out courts and pitches and colouring playing zones on wooden sports surfaces. ULTRACOAT SPORT COLOR is available in eight different colours.

The next edition of Domotex will be held at Hannover from the 11th to the 14th of January, 2019.





THE WESTIN HAMBURG IN CONCERT

IN A NEW HOTEL LUXURIOUS
LVT AND TEXTILE FLOORS
FOR “PURIST” INTERIORS
AND BREATH-TAKING
ARCHITECTURE

In the glass construction of the Elbphilharmonie Concert Hall, The Westin Hamburg hotel opened its doors on 4th November, 2016 in front of the spectacular backdrop of the city's port, inviting guests to experience an unique style of accommodation.

The Elbphilharmonie Concert Hall is a landmark in the Hamburg cityscape: the design was conceived by the Swiss architects Herzog & de Meuron and envisaged a glass structure on top of the existing brick quay warehouse. The most eye-catching feature of this building is its wave-like rooftop whose statics presented a major challenge to the construction companies.

The upper floors of the concert hall accommodate 205 rooms and 39 suites from The Westin Hamburg hotel, together with a large spa and fitness centre, a restaurant, a bar, and modern event facilities.

All hotel rooms and suites distributed over 21 floors offer guests the highest comfort and breath-taking views over

the port, the Speicherstadt warehouse district, the Alster (a tributary of the Elbe river) and Saint Michael's Church through their floor-to-ceiling windows. Guests can go directly from the lobby on the 8th floor to the public plaza, which also opened on 4th November, 2016, and to the Elbphilharmonie Hall.

The hotel belongs to the Starwood Group who signed a 20-year lease for the 21 floors with the Hamburg City Council. As the property and its entire interiors belong to the city, everything in the hotel was purchased, designed and handed over ready for use in close collaboration with the city authorities.

PERFECT FLOORINGS: THE FOUNDATIONS OF WELLBEING

The hotel interior design is both luxurious and discreet: a masterpiece by the Berlin interior designer Tassilo Bost. Working in close collaboration with Herzog & de Meuron, the internationally renowned designer aimed to convey a sense of restraint, naturalness and authenticity in his choice of col-



The hotel rooms and suites sport textile and wood-effect LVT floors which were installed with ULTRABOND ECO 170 and ULTRABOND ECO V4 SP, respectively.





IN THE SPOTLIGHT

ULTRABOND ECO V4SP

It is a special adhesive for PVC and rubber flooring in commercial projects as well as a universal adhesive for all common floor covering types. It is ideal for use on floors and walls in interior applications. It is suitable as wet-bed adhesive on level, absorbent surfaces and underfloor heating systems. It can be used for static and dynamic loads, including intense loads, as well as for stresses from chair castors according to EN 12529.



Elegant LVT coverings were also bonded on the floors of the bistro with ULTRABOND ECO V4 SP.

ours, materials and forms, as well as focusing on an eco-sustainable design. Before drafting his design concept for the hotel, Tassilo Bost studied the city of Hamburg in close detail, as this is the backdrop visible to every visitor and guest. All the windows stretch from ceiling to floor and offer spectacular views of the comings and goings outside: shops, pedestrians, cyclists, cars, all types of city buildings, industrial facilities, multi-coloured containers, etc.. This was the reason why the designer decided to keep everything simple so as not to divert attention away from this amazing view.

An extremely high-quality velour carpet was installed on approximately 11,000 m² of floor area in the rooms and suites, as well as in the corridors and public areas of the hotel. Tassilo Bost combined the carpet flooring with about 600 m² of a light-coloured linoleum floor and 500 m² of high-quality wood-finish luxury vinyl tile (LVT) covering.

The Berliner Ausbau GmbH flooring company used the low-VOC-emission and easy-to-apply products from the Mapei Eco line to ensure perfect substrate preparation and floor installation. After smoothing over irregularities in the substrate using NIVORAPID ultra-fast setting, thixotropic, cementitious

levelling compound (EMICODE EC1 R PLUS-certified by GEV) and filling the cracks in the screed with EPORIP TURBO two-component, quick-hardening polyester resin, the entire floor surface was treated with ECO PRIM VG solvent-free, ready to use, EMICODE EC1 PLUS-certified acrylic primer in water dispersion to regulate the absorbency.

ULTRAPLAN ECO PLUS was then applied to obtain an even and smooth substrate which was ready for laying the floor covering after just 12 hours. This is a low-emission, ultra-fast-hardening, EMICODE EC1 PLUS-certified, self-levelling compound which is manufactured and distributed in Germany by Mapei GmbH.

ULTRABOND ECO 170 adhesive in water dispersion with a quick, strong initial bond and very low emission level of VOC was used to bond the textile floor coverings.

ULTRABOND ECO V4SP was, on the other hand, used to bond both the linoleum floorings and the wood-effect LVT floorings. This multi-purpose, acrylic adhesive in water dispersion with a long open time and very low emission level of VOC ensured a safe, state-of-the art installation that is doomed to last.

TECHNICAL DATA

The Westin Hamburg,
Hamburg (Germany)

Design: Herzog & de Meuron

Interior design: Tassilo Bost

Period of construction:
2007-2016

Period of the Mapei

intervention: 2011-2016

Intervention by Mapei:
supplying products to prepare

the substrates and bond textile, linoleum and LVT floor coverings

Clients: Hamburg City Council; Arabella Hospitality

Main contractor: Hochtief Infrastructure GmbH

Works direction: Hochtief Construction AG

Installation company:
Berliner Ausbau GmbH

Mapei coordinators: Günther Hermann and Lothar Jacob, Mapei GmbH (Mapei Germany)
Photos: The Westin Hamburg Hotel, Michael Zapf

MAPEI PRODUCTS

Substrate preparation: Eco Prim VG, Eporip Turbo, Ultraplan Eco Plus*

Installation of textile floors:

Ultrabond Eco 170
Installation of linoleum and LVT floors: Ultrabond Eco V4SP

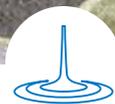
*This product is manufactured and distributed in Germany by Mapei GmbH.

For further information on products visit www.mapei.com and www.mapei.de

AN INFINITE ARRAY OF SOLUTIONS FOR INSTALLING RESILIENT AND TEXTILE FLOORING



SCREEDS



SMOOTHING AND
LEVELLING COMPOUNDS



PRIMERS



ADHESIVES

Resilient and textile floorings are often chosen for the hotel sector to create surroundings with a high visual impact. **Mapei provides a range of specific systems for the installation** of these materials: from screeds to adhesives, a host of **high performance, eco sustainable products**.



S&E GRILL ACADEMY IN DORTMUND



PROPERLY INSTALLED LVT FLOORS FOR A MODERN BBQ STORE

The new S&E (Stellfeld & Ernst) Grill Academy and BBQ centre in Dortmund invites customers to experience an unique “Way of Grilling” in its generous 900 m² space. Interesting materials, numerous details and a special interior design create an attractive environment in which ambitious grill amateurs are introduced by professionals into the secrets of grilling. Themed events with exclusive show grilling take place at this location all year round.

This modern grill store is housed in the premises of a former

trailer rental which were completely renovated by June 2017, just in time for the barbecue season. The tightly clocked time frame “heated up” the works. In as short a time as possible, a floor space of 900 m² was to be prepared for hosting an attractive design flooring. Maximum efficiency, maximum safety and the greatest possible processing comfort were required. This is the reason why two innovative Mapei solutions were used, which ensure new standards in the preparation of substrates and the installation of LVT floorings.



Since the existing ceramic old flooring had some uneven areas, these had to be repaired first. In order to improve adhesion, the substrate was primed with PRIMER SN two-component epoxy primer with fillers, and broadcast with QUARTZ 0.7-1.2 quartz sand. Uneven areas and irregularities were compensated for by PLANIPATCH fine-grained, ultra quick-drying, thixotropic cementitious smoothing compound.

HIGH-SPEED LEVELLING

First, the Stellfeld & Ernst GmbH processors, together with the Mapei sales agents and technicians on site, determined the ideal processing sequence.

The MAPEBox, a special container available on the German market, ensured large-area application of the smoothing compound: just a few handles were enough for the first of three MAPEBox containers placed in front of the building to be ready for operation. It allowed an easier, faster and more cost-efficient mixing and application of the self-levelling compound. Only three employees were required to carry out the work. Approximately 5,500 kg of ULTRAPLAN ECO PLUS self-levelling smoothing compound (manufactured and distributed in the German market by Mapei GmbH) were applied in about 3.5 hours on the 900 m² floor area.

On the following day the installation of the LVT flooring could start. In the interiors, the design floors were bonded with UL-



2



3

PHOTO 1 . The new S&E Grill Academy in Dortmund offers generous and comfortable spaces for grill amateurs and professionals.

PHOTO 2 . Before installing LVT floors, the substrates were treated with PRIMER SN+QUARTZ 0.7-1.2, PLANIPATCH and ULTRAPLAN ECO PLUS.

PHOTO 3 . LVT floor coverings were bonded with ULTRABOND ECO 4 LVT on most of the surfaces while ULTRABOND ECO MS 4 LVT was used for the areas next to the windows.





ABOVE. The new LVT floors, properly installed with Mapei products, add a touch of elegance to the shop premises.

TRABOND ECO 4 LVT fibre-reinforced adhesive, specifically developed for the installation of LVT floorings. In the areas next to the shop windows, which are particularly stressed by solar irradiation and temperature fluctuations, the floor-layers used ULTRABOND ECO MS 4 LVT one-component, polymer-silylate adhesive for LVT. The floorings under the heavy duty shelves were installed with ULTRABOND ECO V4 SP multi-purpose, high-performance adhesive in water dispersion with a long open time and very low emission level of volatile organic compounds (VOC).

The perfect substrate as well as the flawless installation result met the customer's requirements, which ensure a perfect flooring for the location of special BBQ events. The floors also enhance the shop's unique atmosphere and adds a modern, industrial touch.

IN THE SPOTLIGHT
ULTRABOND ECO MS 4 LVT

It is a solvent free, one-component, silylated polymer-based adhesive, specific for LVT floorings. It is also suitable for all kinds of textile and resilient floorings in interior applications, in particular all types of vinyl. ULTRABOND ECO MS 4 LVT is used on absorbent and non-absorbent substrates, as well as on underfloor heating systems. The product is very tough and highly resistant to shear loads, which makes it

particularly suitable for floors exposed to direct sunlight, intense mechanical stress or water. It can be used for the installation of flooring subjected to stresses from chair castors according to **EN 12529**. It is **EMICODE EC1 R Plus**-certified (very low VOC emission) by GEV.



TECHNICAL DATA

S&E Grill Centre/Grill Academy, Dortmund (Germany)
Client: Stellfeld & Ernst GmbH
Period of the Mapei intervention: May 2017
Intervention by Mapei: supplying products for preparing the substrates and installing LVT

floors

Flooring contractor: Stellfeld & Ernst GmbH
Mapei distributor: Prosol Farben+Lacke GmbH
Mapei coordinator: Dominic Schuch, Mapei GmbH (Germany)
Photos: S&E Grillzentrum

MAPEI PRODUCTS

Substrate preparation: Primer SN, Quartz 0.7-1.2, Ultraplan Eco Plus*, Planipatch, Eco Prim T Plus
Installation of LVT floorings: Ultrabond Eco V4 SP, Ultrabond Eco MS 4 LVT, Ultrabond Eco 4 LVT

*This product is manufactured and distributed in the German market by Mapei GmbH (Germany)

For further information on products visit www.mapei.com and www.mapei.de



FOR THE **INSTALLATION OF LVT** IN COMMERCIAL SURROUNDINGS

Ultrabond[®] ECO **4 LVT**



EXCELLENT
TROWELABILITY



LOW EMISSION
OF VOC



SOLVENT-FREE

Fibre-reinforced **adhesive** developed specifically **for installing LVT (Luxury Vinyl Tile) flooring**. **Ultrabond[®] ECO 4 LVT** guarantees excellent performance characteristics in terms of adhesion and dimensional stability. Recommended for intense loads, including in commercial surroundings.





SUNSHINE COAST UNIVERSITY HOSPITAL

PERFECT SUBSTRATES AND LONG-LASTING FLOOR AND WALL
VINYL COVERINGS FOR A HUB OF MEDICAL SERVICES IN AUSTRALIA



The Sunshine Coast University Hospital (SCUH) is a 1.2 billion Euro project by the Queensland Government to address the growing health service needs of the Sunshine Coast community in Eastern Australia.

The hospital opened in 2017 with about 450 beds which are intended to grow to 738 by 2021.

The new public facility has been designed as a tertiary teaching hospital, servicing the Sunshine Coast region, as the hub in an integrated network of accessible healthcare. It is the largest hospital project in Australia to date.

Designed to create natural, freely accessible social spaces that take full advantage of the benign seaside climate, the Sunshine Coast University Hospital offers high levels of public and natural amenity and, through



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PHOTO 1. Substrates were treated with ECO PRIM T and levelled with ULTRAPLAN ECO before bonding the vinyl coverings with ULTRABOND VS90 PLUS.

connection to the local community, enhances the experience of patients and staff, contributing to their wellbeing. Key features of the design include a large integrated central courtyard and the outdoor room designed to take advantage of the healing properties of natural air and light. These major spaces use the natural environment and landscape to create a hospital that blends buildings with landscape, seamlessly linking inside to out.

SAFE INSTALLATION OF VINYL FLOORS AND WALLS IN HOSPITAL FACILITIES

The Sunshine Coast University Hospital was delivered through a Public Private Partnership (PPP) contract with Exemplar Health, a consortium comprising Lend Lease, Siemens and Capella Capital, with partners Spotless Facilities Services. This consortium designed, built and partially financed the public hospital and will continue to maintain it for 25 years.

PK Flooring floor layers were awarded the contract to repair, level, and waterproof substrates, as well as install various selections of vinyl coverings on both floors and walls throughout the extensive hospital areas and amenities. Mapei Australia, the local subsidiary of the Group, was involved in this project to provide a full installation system for over 71,000 m² of flooring and over 20,000 m² of wall coverings.

With over 80% of the concrete floor substrates needing to be levelled, the surfaces were firstly primed using ECO PRIM T solvent-free acrylic primer, followed by the application of

IN THE SPOTLIGHT

ULTRAPLAN ECO

It is used for levelling and removing differences in thickness from 1 to 10 mm on new or existing substrates, preparing them to receive any kind of flooring where high resistance to loads and traffic is needed. Mixed with water, ULTRAPLAN ECO becomes a highly fluid and easily workable mortar, perfectly self-levelling with high adhesion to the

substrate that dries ultra-quickly. The smoothing compounds properly prepared with ULTRAPLAN ECO are classified as **CT-C25-F7-A2_n**, according to **EN 13813**.



ULTRAPLAN ECO, a self-levelling, ultra quick-hardening smoothing compound preparing the substrates to receive any kind of floor covering where an excellent resistance to static and dynamic loads and traffic is required.

Concrete substrates that only required small repairs were treated with PLANIPREP SC (a fibre-reinforced skim coating compound manufactured and distributed on the Australian market by Mapei Australia) and NIVORAPID quick-drying, thixotropic, cementitious smoothing compound.

Some parts of the floor substrates had a lead sheet installed to act as a barrier between X-ray rooms and offices. These areas were levelled using NIVORAPID mixed with LATEX PLUS elasticising latex to improve the deformability of the levelling mortar.

PROJECTS INSTALLATION OF RESILIENT FLOORS AND WALLS



PHOTOS 2 and 3. Some sections of the substrates were repaired with PLANIPREP SC and smoothed with NIVORAPID before bonding the vinyl floors.
PHOTO 4. In the bathrooms wall and floor substrates were waterproofed with MAPEGUM WPS. Vinyl floors were then installed with ADESILEX G19.
PHOTO 5. In the public areas vinyl coverings were bonded with ULTRABOND VS90 PLUS onto floors and with ROLLCOLL onto walls.

The floor and wall surfaces in the bathrooms and wet areas were waterproofed with MAPEGUM WPS quick-drying, flexible, liquid waterproofing membrane.

Once the second coat of MAPEGUM WPS was dry, the substrates in these areas were primed with a coat of undiluted ECO PRIM T, smoothed with PLANIPREP SC in preparation to install the vinyl floor coverings. Distribution joints were sealed with MAPEFLEX PU45, a rapid-hardening, paintable, thixotropic polyurethane sealant and adhesive with a high modulus of elasticity.

In all the wet areas the vinyl coverings were installed using ADESILEX G19 two-component, epoxy-polyurethane adhesive for resilient and textile floorings.

Over 60,000 m² of vinyl floors were installed in the public areas using ULTRABOND VS90 PLUS universal high temperature adhesive in water dispersion with very low emission level of volatile organic compounds.

Vinyl coverings were also bonded on over 27,800 m² of walls using ROLLCOLL multi-purpose adhesive in water dispersion.

TECHNICAL DATA
Sunshine Coast University Hospital, Sunshine Coast (Australia)

Year of construction: 2016

Year of the Mapei intervention: 2016

Intervention by Mapei: supplying products for substrate preparation and installation of vinyl floorings

Main contractor: Lend Lease

Client: Queensland Government

Design: Architectus & Rice Daubney Architects

Floor contractor: PK Floorings
Mapei distributor: McDonalds Flooring Accessories

Mapei coordinator: Troy Bartlett, Mapei Australia Pty Ltd

MAPEI PRODUCTS

Preparing the substrates:
 Eco Prim T, Ultraplan Eco, Nivorapid+Latex Plus, Planiprep SC*

Waterproofing the substrates:
 Mapegum WPS

Sealing distribution joints:
 Mapeflex PU 45

Installing vinyl floor and wall coverings: Adesilex G19,

Rollcoll, Ultrabond VS90 Plus

*These products are distributed on the Australian market by Mapei Australia Pty Ltd.

For further information on products visit www.mapei.com and www.mapei.au



Safe solutions and products for installing resilient floor and wall coverings in hospital facilities

In hospital facilities floors and walls must be compliant with high levels of cleanability, hygiene and safety, while being subjected to high traffic and continuous use. **Mapei** can offer a complete range of cutting-edge and certified products, specially suitable for installing any kind of resilient material.



MINDSPACE COWORKING IN HAMBURG

LUXURIOUS WOODEN FLOORING FOR A HISTORICAL BUILDING
THAT HOSTS CREATIVE WORKING SPACES

The international supplier of coworking spaces from Tel Aviv, Mindspace lately opened its German offices right in the heart of Hamburg's commercial centre, in the historical Klöpperhaus building at Rödingsmarkt. The complex was designed in early 20th century by Werner Lundt and Georg Kallmorgen to host the offices, department store and warehouse of the wool trading company Wm. Klöpper.

The original construction is still worth a visit and so is the new interior fitting: the 6,000 m² office space has been designed to offer small and medium-sized companies, freelancers and young startups an ideal environment with fully-furnished and equipped workplaces with special services. This lifestyle setting includes an exclusive mix of industrial and vintage furnishings combined with carefully selected accessories on

the four high-quality floors. This combination creates a unique working atmosphere, with paintings and artistic works by international artists that can be seen everywhere in the building including the coffee bars, kitchens and lounges. The Mindspace members in Hamburg also profit from the central location and cooperation with various near-by companies including fitness clubs and others. The 100-year, historical Altes Klöp-



© Mindspace



PHOTO 1. Not only coworking: Mindspace in Hamburg also includes coffee bars, kitchens and lounges.

PHOTOS 2 and 3. This lifestyle setting offers an exclusive mix of industrial architecture and vintage furnishings on high quality wooden floors bonded with ULTRABOND ECO S968 1K.

PHOTO 4. In the relax areas the wooden floors were also installed with ULTRABOND ECO S968 1K, after properly preparing the substrates with ECO PRIM T PLUS and ULTRAPLAN ECO PLUS.

perhaps building with its strikingly bold sandstone façade is located directly opposite the Rödingsmarkt underground station and is easily accessible by public transport.

Members also have the free use of Mindspace bicycles. The site also offers workers parking spaces for their own bicycles and cars.

THE FOUNDATION FOR SUCCESS

The refurbishment project involved the construction of a new steel staircase, reinforcement of the ceiling beams and the renovation of floorings. The choice of the floorings played a key role in creating this exceptional setting and atmosphere. A high-quality, engineered pre-finished wooden flooring was chosen for all rooms at Mindspace. It perfectly matches the existing old wooden flooring in the staircase and, due to its 10 mm thickness, it is easy to renovate. Its walking surface is thick enough to sand over later.

The wooden floorboards (1,200 x 125 x 10 mm) were installed on a traditional





© Mindspace

After the completion of the renovation works, Mindspace can offer its members comfort and flexibility.

anhydrite screed which first had to be cleaned and sanded. Mikrut Holzfußbodentechnik wooden floor-layers from Hamburg decided to use the very low VOC emission (EMICODE EC1 Plus) and easy-to-apply products from the Mapei Eco line for both the substrate preparation and wooden floor installation.

To create a top-quality screed surface with even absorbency, the existing anhydrite screed was first primed with ECO PRIM T PLUS solvent-free, acrylic primer in water dispersion with very low emission level of volatile organic compounds (VOC). Once the surface had dried, ULTRAPLAN ECO PLUS was applied to create a smooth and even substrate. This product, which is man-

ufactured and distributed in Germany by Mapei GmbH, is a very low emission, quick-hardening, easy-to-apply, self-levelling smoothing compound.

The engineered pre-finished wooden flooring could then be quickly bonded to the substrate using ULTRABOND ECO S968 1K one-component, silylated polymer-based adhesive, free of solvent content and with very low emission of VOC (EMICODE EC1 R Plus-certified). This is an innovative product guaranteeing a powerful and sustainable adhesion technology.

Thanks also to Mapei products, Mindspace members in Hamburg can now enjoy a perfect working environment: warm, comfortable and inspiring for innovative projects.

IN THE SPOTLIGHT

ULTRABOND ECO S968 1K

It is an one-component silylated, polymer-based adhesive, free of solvent content and with very low emission level of volatile organic compounds (EMICODE EC1 R Plus-certified by GEV). It is ideal for installing all types and formats of pre-finished and solid wooden flooring on any type of substrate, including heated screeds. ULTRABOND ECO S968 1K is a hard category adhesive in compliance with EN 14293 standard; it has an extended workability time; it is easy to apply and has excellent rib stability; it is easy to remove from hands and pre-finished wood.



TECHNICAL DATA

Mindspace offices, Altes Klöpperhaus, Rödingsmarkt, Hamburg (Germany)

Original design: Werner Lundt and Georg Kallmorgen

Period of construction: 1904-1905

Period of renovation:

December 2015-Mid-2016

Client: Mindspace

Main contractor: Cornerstone Real Estate Adviser GmbH

Installation company: Mikrut Holzfußbodentechnik

Mapei distributor: Fries Bodensysteme GmbH

Mapei coordinator: Klaus Timmann, Mapei GmbH (Mapei Germany)

Photos: Mindspace

MAPEI PRODUCTS

Substrate preparation: Eco Prim T Plus, Ultraplan Eco Plus*

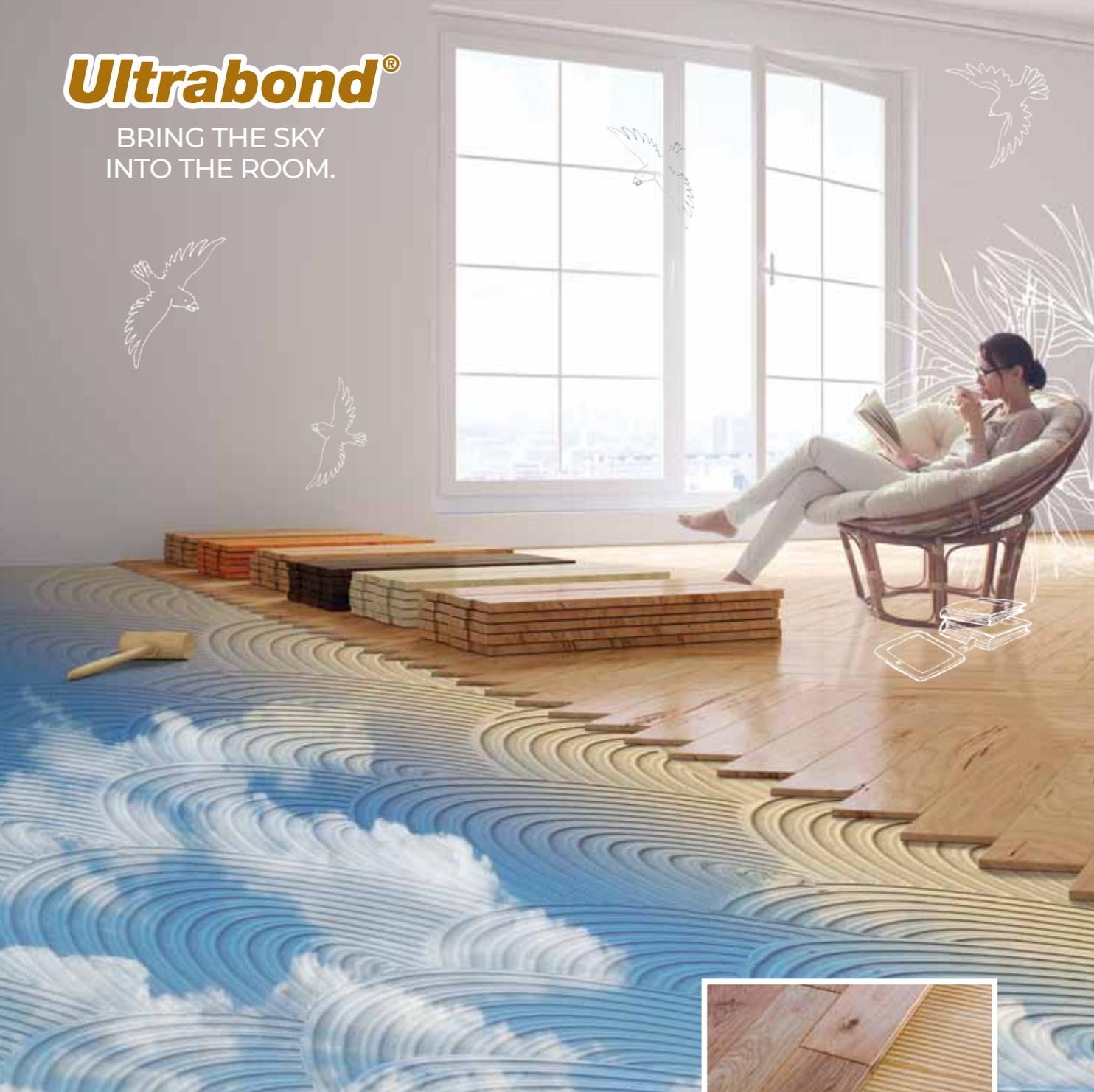
Installation of wooden floors: Ultrabond Eco S968 1K

*This product is manufactured and distributed in Germany by Mapei GmbH.

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FIFA WORLD FOOTBALL MUSEUM IN ZÜRICH

ECO-SUSTAINABLE
SOLUTIONS
FOR INSTALLING
WOODEN FLOORS
IN THE TEMPLE OF
FOOTBALL



The FIFA World Football Museum in Zürich (Switzerland) celebrates the rich heritage of football and shows how the game continues to connect and inspire the world. It also tells the story of how the world football governing body has developed association football globally and made it the undisputed number one sport in the world.

The museum collects, exhibits and preserves significant artefacts, documents and photographs of international football and its governing body. The existing collection has over 1000 exhibits, including memorabilia, texts, and pictures from the FIFA archives.

Pride of place in the FIFA World Football Museum is the FIFA World Cup Gallery. A must-see for all fans, the gallery is dedicated to the history of football's ultimate prize and hosts an

incredible collection in a stunning architectural setting where the jewel of the exhibition – the FIFA World Cup Trophy – is on display.

With a multitude of attractions, audiovisual experiences and thought-provoking exhibitions, the FIFA World Football Museum shows the impact football has had on society, and how it still is a source of inspiration for fans across the globe.

NEW LIFE FOR AN OLD BUILDING

FIFA looked for a suitable building to host the museum for several years. In 2013 FIFA signed a 40-year lease with Swiss Life to rent the Haus zur Enge building on Tessinerplatz in the centre of Zürich. The renovation of the building and the construction of the museum began on 25th April, 2013 and were completed on 18th December, 2015.

Originally an office building, Haus zur Enge was designed by the well-known Zürich architect Werner Stücheli between 1974 and 1978. When plans to convert it into the FIFA World Football Museum were approved, architects from the SAM Architekten und Partner AG studio stripped it back to its shell and rebuilt it, extending it upwards. Through the new structure of the facade, the building was adapted to the landscape and the style of both the city and the surrounding area. Today, the museum has three floors of exhibition space. There also are a street-level sports bar, a bistro, a café, a museum shop and conference rooms on the second floor. There are apartments and offices on the third to seventh floors, and pent-



IN THESE PAGES. The FIFA World Football Museum in Zürich celebrates the world football and FIFA's member associations. Visitors can find their national team's shirt showcased right in the middle of the ground floor.



PROJECTS INSTALLATION OF WOODEN FLOORINGS



IN THESE PAGES. All the different kinds of wooden floors in the museum were installed with ULTRABOND ECO S968 1K.

house apartments on the eighth and ninth floors. Sustainability was an important guideline for the renovation and reconstruction of the building, the interior fittings and the façade. The newest energy saving technologies were implemented: for example, a water pipe connects the building to the lake of Zürich and the lake water is used as an energy source to heat the building in winter and cool it in summer.

HIGH SUSTAINABILITY FOR THE WOODEN FLOORS

The wooden floorings in the museum had to meet the highest requirements concerning the choice of material, the installation methods and the tight schedule of the works. The company GDM Parkette was appointed the installation of different kinds of wooden floors in several areas.

45 m² of bespoke three-layered, engineered, 22 mm thick, smoked and brushed oak floors with the pattern of a hexagonal football honeycomb were chosen for the bistro.

In the seminar rooms and restaurant, 180 m² of three-layer, 22 mm thick, white oak coverings without knots and saps in an oyster grey/beige shade were installed on the floors for the entire length of the room. Additionally, 150 m² of three-layer, 22 mm thick, white oak coverings without knots and saps were installed in English pattern.

In the exclusive flats, a wooden floor made in French oak was installed on 1,500 m². The surfaces were brushed lightly, oiled and limed.

In the museum areas, a customized wooden flooring was installed on 50 stair steps equipped with LED and glass fibre technology.

Mapei Suisse SA, the Group's Swiss subsidiary, helped the owner and the contractors by providing continuous technical assistance both in the design phase and on the construction site. The company proposed the use of quick-setting products with very low emission level of volatile organic compounds (VOC), which helped to meet the schedule of renovation works and the owner's requirements.

To install all the above-mentioned types of wooden floorings the adhesive chosen was ULTRABOND ECO S968 1K one-component, silylated, solvent-free, polymer-based adhesive. Due to its extended workability time, low VOC emission level, easiness of application and excellent rib stability, this product is ideal for bonding all types and formats of pre-finished and solid wooden flooring on any type of substrate, including heated screeds.

Before bonding the wooden covering, the floor substrates were treated with several Mapei solutions. ECO PRIM PU 1K TURBO one-component, solvent-free, rapid-drying polyurethane primer with a very low emission level of VOC, to provide an anti-dust treatment for dry screeds with a crumbly surface before the installation of inspection floorings.

ECO PRIM T ready-to-use primer with a very low emission level of VOC was used on some sections of the substrates to promote adhesion, before applying PLANIPATCH fine-grained, ultra quick-drying, thixotropic cementitious compound for smoothing the surfaces.

This successful application of Mapei solutions once again proved that the Group is always ready to support sport in its most important locations.

TECHNICAL DATA

FIFA World Football Museum, Zürich (Switzerland)

Period of construction: 1974-1978

Period of renovation: 2014-2016

Client: HRS Real Estate AG

Design: SAM Architekten und Partner AG

Period of the Mapei intervention: 2015-2016

Intervention by Mapei: supplying technical assistance and products for substrate preparation and installation of wooden floorings

Owner: Swiss Life (Schweiz) AG

Wooden floor suppliers: m parkett AG; Holzpunkt AG
Wooden floor installer: GDM Parkette

Mapei distributor: Nydegger AG

Mapei coordinator: Jens Stenzel, Mapei Suisse SA (Switzerland)

MAPEI PRODUCTS

Substrate preparation: Eco Prim T, Planipatch, Eco Prim PU 1K Turbo

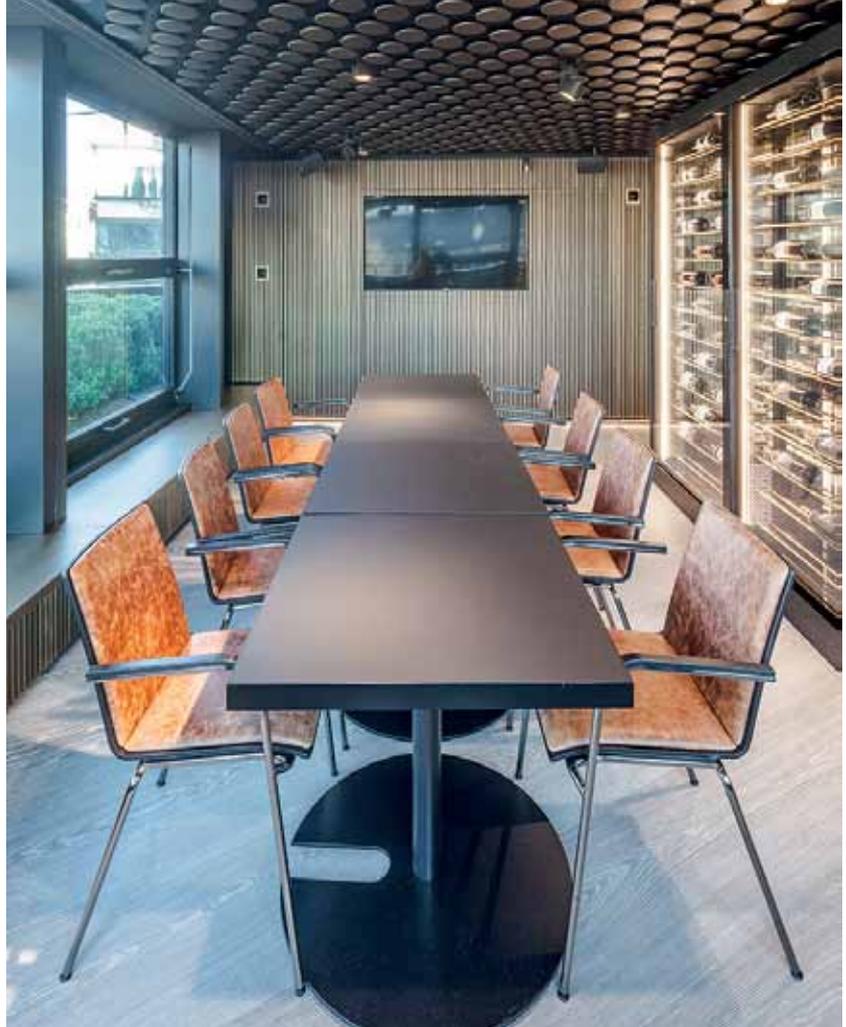
Installation of wooden floors: Ultrabond Eco S968 1K

For further information on products visit www.mapei.com and www.mapei.ch

IN THE SPOTLIGHT

ECO PRIM PU 1K

It is a one-component polyurethane primer used for surface consolidation and dust-repelling treatment on cementitious, anhydrite and heated substrates, as well as for waterproofing cementitious screeds with a residual humidity content higher than the level recommended for laying parquet. ECO PRIM PU 1K TURBO is characterised by its short set to light foot traffic period, so that parquet may be laid after a very short time. It is solvent-free, odourless and has very low emission level of volatile organic compounds (**EMICODE EC1 R Plus**).



MATERA

2019 EUROPEAN CAPITAL OF CULTURE

TOGETHER WITH THE BULGARIAN CITY
OF PLOVDIV



After obtaining a total of 7 votes out of 13, Matera (Southern Italy) has been officially announced as the 2019 European Capital of Culture, together with the Bulgarian city of Plovdiv, beating off competition from the other five Italian finalists: Ravenna, Cagliari, Lecce, Perugia and Siena.

This title was first awarded in 1985 to promote a better knowledge and understanding of the historical-artistic and cultural heritage of nations belonging to the European Union. The first city to earn this accolade was Athens. Nowadays, two nations from the European Union are jointly selected: this year's winners were Leeuwarden (Netherlands) and La Valletta (Malta).

The Italian Minister of Cultural Heritage and Activities and Tourism, Dario Franceschini, stated that "this has been a wonderful experience for the six Italian cities taking part and extremely

important for Italy".

The cultural programme being drawn up for 2019, involving an overall investment of approximately 52 million Euros, is in the hands of the Matera-Basilicata 2019 Foundation. According to its president Aurelia Sole, "we are wasting no time in drawing up the programme and we are the first regional capital to have already come up with 50% of its content one year ahead of schedule. We are working all over the territory on joint-ventures to create a European-scale project. From creative industries to Basilicata University, from associations to institutions, everybody is working hard to be ready for an event we hope will leave a real legacy for Matera and southern Italy".

The slogan Matera chose for its bid was "Open Future": indeed, according to the promotion committee, "we are all ob-





sessed by the eternal present in which we are immersed. But an ancient city like Matera is not afraid to think about the times that lie ahead. It has already reinvented itself many times and always successfully overcome the challenge posed by time". The organisational machinery is already in motion and the city is giving itself a makeover, since this event is rightly considered to be a wonderful opportunity to promote the tourism industry and culture of the city and the entire surrounding area, with all its traditions, historical-artistic heritage and beautiful natural environment. Some experts claim that the economic impact of being awarded this accolade is worth approximately 30 million Euros to the entire area.

Matera will be in the spotlight for a year, but the city is already internationally famous mainly for its Stones that are renowned

all over the world. Any trip to Matera is bound to include a visit to the Stones, which became a UNESCO World Heritage Site in 1993, the first place in southern Italy to achieve this status. Matera's Stones look like a city built directly in the rocks, complete with underground entrances, churches constructed in caves and other monuments. Matera's ancient dwellings have been carved directly into the rock face and for centuries have formed the city's urban agglomeration. They are divided into three main zones: Sasso Barisano to the north, Sasso Caveoso to the south and the Civita, situated centrally, where the Cathedral dating back to 1270 stands. The old city centre's paving had to be repaired not just to make the city streets more inhabitable, but also to make Matera more welcoming for all the visitors expected next year, as you can read in the next article.



PROJECTS **INSTALLING ROAD SURFACES IN STONE**



NEW ROAD SURFACES FOR MATERA

IN PREPARATION FOR 2019, WHEN MATERA IS SET TO BECOME THE CAPITAL OF CULTURE, THE STREETS IN THE OLD CITY HAVE BEEN RENOVATED

Renovation of the road surfaces in the old part of Matera started with a project that identified the areas with a strategic value and carefully analysed their position, their significance and the technical problems affecting them. A number of streets and piazzas were chosen from within a limited area in order to maintain the right level of quality and, at the same time, remain within the economic constraints of the intervention.

The new surfaces were designed so as to conserve the historical significance of the existing roads – by maintaining their overall layout – in a natural continuation of materials, colours and construction methods.

Where more radical interventions were not required to keep the streets in a good state of conservation, only general maintenance work was carried out.

The piazzas and streets where the intervention was carried out (Via delle Beccherie, Piazza Sedile, Via del Corso, Via San Francesco, Via San Biagio and Piazza San Giovanni Battista) are situated in the central part of the old city and are those most frequented by the local inhabitants and tourists.

THE GENESIS OF THE PROJECT AND PLANNED INTERVENTIONS

The main aim of the project was to give a new lease of life to the streets in the old city centre without overlooking its centuries-old history, while also taking into consideration its new requirements in terms of functionality, aesthetics and safety.

Even though the streets selected for the intervention are bor-

dered by buildings no more than one hundred years old, the roads were completely resurfaced using traditional techniques, that is, with a kind of flagstone called "basola" made of local Trani or Apricena stone. It was not uncommon to find basalt inserts, which were probably installed to replace broken flagstones or work carried out on the substrate.

The project also included an overhaul of the various plant systems and underground systems to avoid carrying out further work in the future. The new plant systems were designed so that they could be extended at a later date and also to be more flexible, by providing more connections and installing larger mains, and to simplify maintenance work as much as possible by including manhole covers and inspection chambers.

Going into detail, the paving stones along Via delle Beccherie were removed and the ones in good condition were reused, while the damaged ones, or those with an irregular shape, were discarded. They were then re-worked so they had the same thickness, taking them from 25-40 cm down to 15 cm. This made the old paving stones compatible with the flat, reinforced concrete substrates and will prevent differential subsidence in the road surface.

Work was then carried out in Via del Corso, where the entire road surface was renovated by replacing the old concrete bricks with Apricena paving stones and demolishing, removing and rebuilding the old plant systems and underground systems. The surface of the roadway running from Piazza Vittorio Veneto up to the former Upim building was completely

LEFT.

A view of the new road surfaces in the old city centre of Matera. A number of streets and piazzas were renovated maintaining the right level of quality, colours and construction methods.

RIGHT.

The first phase of the intervention included removing the old paving stones and cleaning the substrate.



PROJECTS INSTALLING ROAD SURFACES IN STONE



IN THE SPOTLIGHT
MAPESTONE TFB 60
 It is a pre-mixed, ready-to-use powder mortar for the grouting of joints of external natural stone paving and road finishes suitable for vehicular use. It is part of the MAPESTONE SYSTEM, which allows to create architectural stone paving with high durability even in environments subject

to rain, to freeze-thaw cycles in the presence of de-icing salts and seawater (exposure classes XF3, XF4 and XS3). MAPESTONE TFB 60 is used to make installation screeds for natural stone architectural flooring suitable for squares, roads, pavements, parking lots, pedestrian crossings, roundabouts and speed humps.




PHOTOS 1 and 2. Installing the paving stones on an installation screed made from MAPESTONE TFB 60.

PHOTO 3. The intervention was completed by grouting the joints with MAPESTONE PFS 2 VISCO ready-mixed mortar.

replaced and the road itself was raised to the same level as the pavement, and in this case, too, the old paving stones that had been removed were reused after taking them all down to the same thickness. Via San Biagio, the first part of Via Stigliani and Piazza San Giovanni Battista were all renovated with a road surface made from new paving stones.

To complete this first list of works, an intervention was carried out along the short stretch of Vico Conche by completely renovating the road surface and plant systems.

MAPEI SOLUTIONS FOR OLD ROAD SURFACES

The first intervention proposed by the designers was to renovate the paved road surface in Via delle Beccherie, the street which was the historical home of the city's various food and grocery shops. To install the paving stones, Mapei technicians proposed using the MAPESTONE system, specifically developed for installing stone road surfaces at a lower cost and with

numerous advantages.

The MAPESTONE system includes products in exposure class XF4 and complies with the requirements of EN 206-1 standards to guarantee the durability of any work carried out.

Stone road surfaces installed using this system will only require maintenance work after a number of years because they are resistant to freeze-thaw cycles, de-icing salts and rain and the mortars used do not tend to crumble and remain unchanged over the years. They also have the capacity to absorb mechanical loads and stresses caused by the passage of vehicles, including heavy goods vehicles, and dangerous hollows due to structural subsidence do not appear.

To install the large paving stones, which on average were around 7 cm thick, the product used was MAPESTONE TFB 60 pre-mixed, ready-to-use mortar, while the joints (15/20 mm wide on average) were filled with MAPESTONE PFS2 VISCO low-viscosity ready-mixed mortar.

TECHNICAL DATA

Old city streets, Matera (Italy)

Year of the intervention: 2017

Intervention by Mapei: supplying products to renovate the stone roads

Design: Sergio Lamacchia Acito, Maria Teresa Fasano, Massimo Bocchi, Nicola Fortunato

Client: Matera City Council

Works direction: Biagio Ferrara, Federico Lorusso

Site direction: Renzo

Loiudice, Luigi Baldassare

Installation company: Edil Co. Srl

Mapei coordinators:

Francesco Dragone, Carlo Vitulli, Mirko Malvasi, Giovanni Villani, Marcello Deganutti, Achille Carcagni, Mapei SpA

MAPEI PRODUCTS

Installation of stone floorings: Mapestone TFB 60

Grouting and sealing joints: Mapestone PFS2 Visco

For further information on products visit www.mapei.com



Matera, between technology and tradition

INTERVIEWING THE ARCHITECTS WHO DESIGNED THE INTERVENTIONS, SERGIO LAMACCHIA AND MARIA TERESA FASANO

Matera is a “fragile” city in a geographically difficult position and has a communications network that leaves it quite isolated. Yet it managed to become one of the 2019 Capitals of Culture. How did you manage to overcome the task of repaving the existing roads?

Tackling the problem of renovating road surfaces in old town centres means interacting with an idea that the population already has of the area and that you will also be leaving a mark that will last at least one hundred years. The overriding theme of “2019” was a further design challenge. This had an impact mainly on the installation schedule and the way we dealt with setbacks, an ever-present characteristic of restoration works, which were approached with extra determination.

Repaving the road surfaces, the introduction of a pathway for the visually impaired and redevelopment of the network of underground systems: these are just some of the interventions carried out to redevelop the three main thoroughfares in the old city centre. How did you overcome the problems of traffic and safety while the work was being carried out?

The intervention was carried out in an area that consisted of two main thoroughfares running parallel. These were also divided by work carried out over the course of the first half of the last century, which helped simplify the work thanks to the presence of various crossroads. Working in such conditions enabled us to divide the site into a series of separate and successive lots which, as the work progressed, occupied just single stretches of the main thoroughfares.

Also, to guarantee access and mobility for pedestrians, each single stretch had suspended walkways with planks that could be adapted to suit the irregular form of the roads and pavements. Work was also often carried out underneath suspended walkways. For more invasive work we opted to work during the night.

The choice to use “basola” stones again, both the old ones and new ones, was entirely due to a desire to give a sense of continuity to tradition, or was it more of a technical and functional choice?

There are numerous reasons for choosing to use the old “basola” flagstones. Firstly, to maintain the history of the area, but also as a way of interacting with the buildings along the sides of the roads. Then there are sustainability reasons: the desire to recover and recycle means extracting a lower amount of new construction material from quarries. The same reason was behind the express wish of the Head of the local Office of Public Works to opt for recycling what would have been waste material from trimming the thicker flagstones to resurface the old pavements.

How did introducing the MAPESTONE system change the way things were run on site?

Using a specific type of mortar, such as MAPESTONE, meant there was an experimental phase, especially as far as training the workforce was concerned. They had to be instructed how to use the product correctly, so we asked for the support of specialists from the manufacturer so we could have the most direct information on the ready-mixed mortars provided. We proceeded by using practical, hands-on trials so that the operator of the mixing unit could ap-

preciate for himself the correct viscosity of the mix before handing it over to the installation team.

Renovating roads in an urban context is not a simple task: how much does it help to be able to rely on cutting-edge products such as those proposed by Mapei?

Using ready-mixed mortar on site was a great help. It made installation of the road surface easier and it freed the workers from the arduous task of having to build traditional screeds, which certainly helped to speed up installation, and also the bags could be stored on pallets more neatly. But the most important aspect which a special mortar guarantees, is the durability of the road surface as a whole and its ability to preserve flagstones against the classic sinking effect and cracks. Apart from having a reinforced concrete substrate that has been prepared correctly, these aspects also depend particularly on the mechanical characteristics of the installation mortar, which must be able to provide the same level of support constantly in every area and have a high level of mechanical strength. An important contribution to the success of the installation operations was the presence of the manufacturer's specialised technicians during the initial phase, which proved to be fundamental for the correct training of the workers, and then during various site surveys to check on the work and help overcome the type of problems you always come across on a restoration site. These meetings proved to be extremely useful and gave us the chance to compare the different materials used and find out more about their different variations and other possible applications in order to have a more complete technical understanding.



INTERVIEWING THE WORKS DIRECTOR BIAGIO FERRARA

Matera is a “fragile” city in a geographically difficult position and has a communications network that leaves it quite isolated. Yet it managed to become one of the 2019 Capitals of Culture.

How did you manage to overcome the task of repaving the existing roads?

I was asked to come to Matera to offer my modest contribution towards the “Matera: 2019 Capital of Culture” project and, I must confess, I immediately fell in love with the city. I wouldn’t say Matera is “fragile”; I think perhaps it is just tired, like all of Basilicata. There is something you should be aware of regarding the repaving work: Matera will never forsake its historical traditions. But the city will certainly know how to combine new skills and new products in a kind of marriage between technology and tradition, without betraying its thousand year old past.

Repaving the road surfaces, the introduction of a pathway for the visually impaired and redevelopment of the network of underground systems: these are just some of the interventions carried out to redevelop the three main thoroughfares in the old city centre. How did you overcome the problems of traffic and safety during the works?

The site was so complex that, to minimise the amount of disruption to the local inhabitants and shops, we were forced to also work during the night. We went ahead in small steps and, as work on the site progressed, we tried to leave a completely finished, or at least transitable, road behind us. For each single step, the area being worked on was divided into three zones: the first one was where we removed the old “basola” stone slabs so we could send them immediately to be processed and cut down to the same thickness.

The second zone was where we worked on the underground services and installed screeds to distribute the loads (the ground under Matera is like Swiss cheese, full of holding tanks, cavities and underground tombs) and lastly, in the third part of the site, the contractors proceeded with the reinstallation of the stone surface.

It was all carried out using typical “just in time” methods to reduce the area needed to store materials. Problems regarding safety took up a lot of our time and commitment. Discipline, supervision and method were the three key words that guided my work and allowed us to complete the work in safety and without too many setbacks.

Obviously this was only made possible thanks to the enormous team effort involving all the contractors, the staff from the Works Management Office, the Project Manager archt. Gandi, the Director of the Matera Office of Public Works Sante Lomurno, the Police Department and the Executive Councillor for Public Works Michele Casino. No less important was the support from the archaeologist Venantina Capolupo and the Operational Directors: Federico Lorusso and Sergio Lamacchia.

The choice to use “basola” stones again, both the old ones and new ones, was entirely due to a desire to give a sense of continuity to tradition, or was it more of a technical and functional choice?

The design work was done by ATP under the guide of architect Sergio La Macchia, who worked alongside me as Director of Operations, including during the execution phase. I can tell you about the principles that inspired this choice. On the one hand, using recycled stones guarantees continuity with tradition as a way of respecting the work of past generations, while on the other hand the quality of the material that had been installed in the past meant that we could

recycle the old material without compromising on functionality. This choice led to a reduction in costs for the area and helps safeguard the environment. No less of a burden were the stringent prescriptions laid down by the local Department of Cultural and Archaeological Heritage.

And precisely with a view to recycle the old material, the areas that used to be pavements were re-surfaced with fragments cut from the darkest and hardest stones available on site.

How did introducing the MAPESTONE system change the way things were run on site?

By using the MAPESTONE system, the workers were forced to re-evaluate the way they work. When we started, they were looking at the mix with fear and curiosity. Then, once they got used to it, they progressed more quickly without any particular problem and they became quite happy to use this mix that allowed them to step onto the stones right after they had been installed.

Resurfacing roads in an urban context is not a simple task: how much does it help to be able to rely on cutting-edge products such as those proposed by Mapei?

The products have exceptional technical characteristics. They allowed me to overcome problems which, with traditional products, would have been difficult to overcome.

MAPESTONE allowed us to open newly renovated roads without having to wait the long curing times required for traditional products. And the Mapei Technical Services Department intervened, every time of asking, extremely quickly and with great expertise.



CONSOLIDATING AMONGST HISTORY AND ART

DEDICATED TO THE PATRON SAINTS OF MATERA, THE CATHEDRAL HAS BEEN THE OBJECT OF DELICATE CONSOLIDATION AND STRUCTURAL STRENGTHENING WORK

Built in Apulian-Romanesque style, Matera cathedral is dedicated to the Madonna dell Bruna and St. Eustachio and sits on the highest spur of the city, which splits the Sassi cave dwellings into two halves. Completed in 1270, the church was built by raising its rocky foundations by more than six metres so that it would overlook the surrounding territory. The façade of the cathedral is dominated by a rose window and a main entrance door with a round arch.

Upon entering the cathedral, visitors immediately notice the contrast with the style of its exterior: all that remains of the original interior of the church are a few frescoes and the capitals of the columns; stuccoes and gold leaf décor were added in the seventeenth century, while the trussed ceiling was covered in 1719 with a wooden suspended ceiling. The layout of the church is a typical Latin cross style with three aisles and is 54 m long, 23 m high and 18 m wide.

WORKING IN A HISTORICAL SETTING

A series of interventions inside the cathedral was launched in 2014 to consolidate and strengthen its structure and to renovate its decorative features. Mapei Technical Services was con-



PHOTO 1. The MAPEWOOD system was used for the wooden roof beams and trusses and the MAPEWRAP system was applied to strengthen the structure.



PHOTO 2. TOPCEM PRONTO was used to build heated screeds.

PHOTO 3. Slabs of marble were installed in the interiors with GRANIRAPID.

PHOTO 4. Repairing the beams with MAPEWOOD PASTE 140.

tacted and, for the static consolidation and structural strengthening work on the dome over the presbytery and the smaller timbered vaults, they advised using a combination of the latest generation of inorganic matrix composites from the FRG SYSTEM and polymer matrix, fibre-reinforced composites from the FRP SYSTEM.

Consolidation of the wooden beams and trusses.

The first phase of the work consisted in consolidating the surfaces of the wooden trusses over the lateral and central naves. Once the wooden structural elements had been catalogued, numbered and dismantled, they were treated to protect them from woodworm and dry rot and then primed with two coats of MAPEWOOD PRIMER 100 fluid epoxy impregnator. A layer of MAPEWOOD PASTE 140 epoxy adhesive pigmented in the colour specified by the Works Director was then applied. This phase was completed by bonding wooden slats to some of the areas treated with MAPEWOOD PASTE 140 thixotropic adhesive which, while still wet, had been broadcast with QUARTZ 0.5 quartz sand.

The second intervention involved consolidation of the wooden beams and trusses over the central nave by fastening two CARBOPLATE E170/50 plates near to the intrados of the chain with MAPEWOOD PRIMER 100, MAPEWOOD PASTE 140 and MAPEWOOD GEL 120. Metal inserts were added to the arches in the presbytery using 5 mm titanium threaded rods, which were fastened into the arches by drilling a series of holes and anchoring them with MAPEFIX EP 470 SEISMIC pure epoxy resin-based chemical anchor.

Intervention on the dome over the presbytery. To strengthen the extrados of the dome, the Mapei FRP system was proposed, which involves the use of MAPEWRAP G UNI-AX 300/30 uni-directional, high strength, glass fibre fabric, applied with a line of epoxy resins such as MAPEWRAP PRIMER 1, MAPEWRAP 11, and MAPEWRAP 31.

This strengthening system was applied on the properly prepared substrate with PLANITOP HDM RESTAURO. The system was linked to the perimeter walls with MAPEWRAP G



FIOCCO glass fibre cord, anchored with MAPEFIX VE SF resin-based chemical anchor.

Consolidation of the vaulted roofs.

When consolidating the three limestone vaults unearthed during the archaeological digs MAPE-ANTIQUE ALLETTAMENTO was used for sealing the joints between the bricks. After the application of PRIMER 3296, a cap was made with PLANITOP HDM RESTAURO fibre-reinforced mortar and MAPEGRID G



PHOTO 5. Static structural strengthening work on the dome over the presbytery using the MAPEWRAP system. **PHOTO 6.** The flooring, made up of slabs of Carrara marble and Bardiglio inserts, was installed using ELASTORAPID two-component cementitious adhesive.

220 glass fibre mesh.

For the new structural renders in the transepts and in the Sacramento and Annunziata chapels, it was recommended to use MAPE-ANTIQUE STRUTTURALE special mortar with MAPE-GRID G 220 glass fibre mesh embedded in the mortar.

Interventions on the interior:

Wall plasters were restored by starting with a thorough mechanical cleaning. They were then consolidated with a series of micro-injections of a cement-free, lime-based hydraulic binder (MAPE-ANTIQUE I-15), filling the surface cracks, and then applying a coat of lime-based paint.

Dehumidifying renders were created using salt-resistant lime-based, cement-free products with MAPE-ANTIQUE RINZAFFO (applied in a 5 mm thick layer) and MAPE-ANTIQUE MC (in a 20 mm thick layer). MAPE-ANTIQUE LC, MAPE-ANTIQUE FC GROSSO and MAPE-ANTIQUE FC ULTRAFINE were also applied thereupon.

As for the interior floors, an aerated flooring system was also created to counteract rising damp from the substrate. This structure was made up of modular formworks and a screed

made from TOPCEM PRONTO, a product which is ideal to build heated screeds thanks to its high thermal conductivity ($\lambda = 2 \text{ W/mK}$). The slabs of marble were installed on the screed using GRANIRAPID adhesive in its white shade. The joints were then sealed with MAPESIL LM sealant.

The Carrara marble and Bardiglio grey inserts were installed using ELASTORAPID adhesive in its white shade.

**IN THE SPOTLIGHT
MAPEWOOD PASTE 140**

It is a solvent-free epoxy adhesive used for bonding new timber parts to existing timber structures after the removal of damaged parts, as well as for filling holes both in the existing timber structural elements and in the new wood elements in order to anchor connecting reinforcing rods

and/or plates. MAPEWOOD PASTE 140 can be easily applied both on vertical and horizontal surfaces. It hardens without shrinkage and has excellent mechanical strength.



TECHNICAL DATA

Madonna della Bruna and Saint Eustachio Church, Matera (Italy)

Period of construction: 1226-1270

Period of the intervention: 2014-2016

Intervention by Mapei:

supplying products for structural strengthening, consolidating the wooden beams, building screeds, renovating masonry, and installing marble slabs

Client: Matera and Irsina Archdiocese

Project Manager: Laura Montemuro

Architectural design:

Renato D'Onofrio, Leonardo Nardis, Francesca Contuzzi

Structural design: Andrea Giannantoni

Works Direction: Renato D'Onofrio, Antonello Pagliuca, Francesca Contuzzi

Scientific consultant: Paolo Rocchi

Supervision: Francesco Canestrini, Antonio Persia, and Renato Di Marzio (Basilicata Region Department for Archeology, Fine Arts and Environment)

Main contractor:

D'Alessandro Restauri Srl
Mapei distributors: Edil

Loperfido Srl, Edil Sud Srl

Mapei coordinators: Michele Mirco Malvasi, Francesco Dragone, Achille Carcagni, Gianmario Disposto, Davide Bandera, Mapei SpA (Italy)

MAPEI PRODUCTS

Repairing wooden elements:

Carboplate E170/50, Mapewood Primer 100, Mapewood Paste 140, Mapewood Gel 120, Quartz 0.5

Structural strengthening: Mape-Antique Allettamento, Planitop HDM Restaura, MapeGrid G 220, Primer 3296

Static strengthening: Mapefix

EP 470 Seismic, MapeWrap 11, MapeWrap Primer 1, MapeWrap 31, MapeWrap G UNI-AX, MapeWrap G Fiocco, MapeWrap S Fiocco

Building screeds: Topcem Pronto

Installing marble: Granirapid, Elastorapid

Sealing expansion joints: Mapesil LM
Renovating internal walls: Mape-Antique Rinzafo, Mape-Antique MC, Mape-Antique LC, Mape-Antique FC Grosso, Mape-Antique FC Ultrafine

For further information on products see www.mapei.com



DI LEO BISCUIT PRODUCTION UNIT IN MATERA

CONCRETE REPAIR, NEW FLOORS AND
COATINGS FOR A CUTTING-EDGE FACILITY

The story of the Di Leo biscuit manufacturing facility started more than 150 years ago, in 1860, when the Di Leo bakery was founded in Altamura (Southern Italy), with the intention to just bake bread made by the local families. In the 1930's they then started actually making and selling their own bread. In the 1950's and 60's, apart from making bread, the company also started making biscuits and, in the 1990's, the bakery moved to new premises equipped with high quality machineries and materials in the industrial area of Matera. Apart from making their own brand biscuits, the company, which in the meantime had changed its name to Di Leo SpA, also started supplying other important food companies.

Since then, the manufacturing facility in Matera has been making and selling a wide range of baked products, from traditional biscuits to shortbread with important nutritional properties.

Di Leo is currently the eighth most important brand of biscuits in Italy in terms of sales and volume and has been awarded ISO 22000 – ISO 14001 – IFS certifications in recognition of the quality of the company structure.

It is also one of the first companies in southern Italy to have obtained a category A award from BRC Global Standard Food, the highest level achievable from this prestigious British quality certification protocol for the food industry.





THE IMPORTANCE OF BEING RESPONSIBLE

Di Leo has always believed it is important to be actively involved in society through various projects and enterprises. Ever since 2014, when Matera first decided to make a bid to be one of the 2019 European Capitals of Culture, the Di Leo company has backed the bid by joining the Matera 2019 Committee, which has promoted the planning and organisation of a series of events supporting the project. The company gave its support through a campaign printed in the *Sole24ore* newspaper promoting a competition for secondary schools entitled "Tell us the good things about Matera", organising roundtables with local administrators and baking its "Caveosi" biscuits named after the famous local caves specially for this occasion.

After deciding to remove palm oil from all its products in 2016, Di Leo wanted to support a different cause: safeguarding and protecting orangutans through the "All'orango io ci tengo (We care about orangutans)" project. Working with Planet Onlus environmental protection agency and SOS (Sumatran Orangutan Society), his new project has three aims: to save 15 orangutans and help them settle back in their natural environment, to salvage a hectare of their natural habitats by planting a thousand trees, and to help with the long-term conservation of Sumatra's primitive rainforests. To achieve this the Di Leo company donated 1% of the income from the sale of its *Faticcasa* biscuits - made only from corn oil - to the project from October 2016-October 2017. The decision to take action in favour of Sumatra is linked to the fact that the Di Leo company no longer uses palm oil for making its biscuits: uncontrolled deforestation to plant oil palm trees has devastated the island and jeopardised the orangutans' natural habitat.

ABOVE. Pietro Di Leo with the shirt promoting the project to protect orangutans.

IN THE FACING PAGE. The external walls of the Di Leo production facility were protected and decorated with QUARZOLITE BASE COAT and ELASTOCOLOR PAINT.

PHOTOS 1 and 2. Inside the facility, the joints were carefully treated with PRIMER AS, MAPEFOAM and the sealants MAPEFLEX PU40 and MAPEFLEX PU45. The irregularities in the substrate, such as holes and cracks, were filled with EPORIP epoxy adhesive.

PHOTO 3. Applying the MAPEFLOOR I 300 SL two-component, multi-purpose, neutral-coloured epoxy formulate.

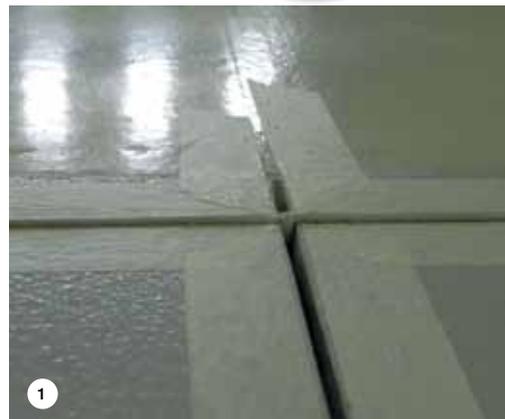




PHOTO 4. The resin floorings in the production area after completion of the works.
PHOTO 5. Giorgio Squinzi, CEO of the Mapei Group, during his visit to the Di Leo production unit.

A CUTTING-EDGE FACILITY

The company, which currently has more than 40 employees and a production facility covering around 18,000 m² within a total area of 100,000 m², was interested in renovating the manufacturing unit in Matera with a technical solution that would both improve the building's aesthetic qualities and ensure the structure would remain serviceable for a number of years.

Mapei Technical Services came up with a cycle of repair work suitable for repairing the concrete and finishing and protecting the wall surfaces.

After analysing the surfaces and materials involved in the intervention, and then checking the substrates along with the designers and contractor and taking various samples, work got under way by protecting the reinforcing rods. Concrete was removed to expose the rods, which were then thoroughly cleaned to remove all traces of rust and then treated with MAPEFER 1K one-component cementitious mortar to prevent corrosion.

Once the rods had been treated, the surface of the concrete was repaired and smoothed over. PLANITOP SMOOTH & REPAIR was used for this phase of the work, a class R2, fibre-reinforced, rapid-setting, shrinkage-compensated cementitious mortar which may be applied in a single layer from 3 to 40 mm thick. In certain areas it was preferable to apply class R4 PLANITOP SMOOTH & REPAIR R4 fibre-reinforced, shrinkage-compensated, rapid-setting mortar.

Once the substrate was dry, the joints were carefully treated with a number of specific products:

- PRIMER AS (which is now available as PRIMER A) one-component transparent primer for absorbent surfaces, ideal for joints that, once sealed, are in contact with liquids for lengthy periods of time or subject to high mechanical stress;

- MAPEFOAM closed-cell, extruded foam polyethylene cord, which is inserted along the bottom of joints to gauge the correct size, followed by MAPEFLEX PU45 polyurethane adhesive (which was later superseded by MAPEFLEX PU 45 FT) applied over the cord;

- MAPEFLEX PU40 paintable polyurethane sealant with low-modulus of elasticity for movements in joints of up to 25%.

For the internal flooring in the facility, it was decided to use MAPEFLOOR SYSTEM 32, a solvent-free, multi-layer epoxy coating cycle applied in an average thickness of 3-3.5 mm. This system met the requirements of the client, who had specified a type of flooring that would maintain its durability over the years, had a non-slip finish, was easy to apply and clean and also provided a high level of resistance to wear and abrasion caused by foot traffic and frequent cleaning operations.

The first step in this intervention was to prepare the substrate by shot-blasting it. After carrying out this operation, all the defects in the substrate, such as holes and cracks, were repaired by filling them with EPORIP special epoxy adhesive. Afterwards, the application of MAPEFLOOR SYSTEM 32 could begin. The first step was to apply an even coat of PRIMER SN over the entire surface, which was then fully blinded with QUARTZ 0.5 while still wet. Once PRIMER SN had hardened, all the excess sand was removed with a heavy-duty vacuum cleaner. An intermediate layer of coloured MAPEFLOOR I 300 SL was then applied in an even coat over the surface with a smooth rake. While MAPEFLOOR I 300 SL was still wet, this was also fully blinded with QUARTZ 0.5 and, once it had hardened, the excess sand was removed.

The final layer of MAPEFLOOR I 300 SL, properly prepared by adding QUARTZ 0.25, was spread over the surface with a medium-haired roller to form a perfect, defect-free finish.



Lastly, to protect and decorate the walls, the designers chose a base colour of white interspersed with sections in orange and red, the company colours, over a total area of 7,000 m². The surfaces were initially primed with QUARZOLITE BASE COAT coloured acrylic undercoat in water dispersion, in the colours mentioned previously, to even out the surface. Work was completed by applying a final coat of one-component, acrylic resin-based ELASTOCOLOR PAINT. Once completely dry, this type of paint forms an elastic coating impermeable to water and aggressive agents in the atmosphere while remaining permeable to vapour.

IN THE SPOTLIGHT

ELASTOCOLOR PAINT

It is a one-component acrylic resin-based paint in water dispersion for painting cracked facades and concrete structures subject to deformation. Once completely dry, ELASTOCOLOR PAINT forms a flexible finishing coat which is impermeable to water and aggressive agents in the atmosphere, while remaining permeable to vapour. ELASTOCOLOR PAINT has excellent resistance to ageing, freezing weather conditions and de-icing salts, and the photochemical film which forms makes it very difficult for dirt to remain attached to the surface. It meets the main requirements of EN 1504-9 and EN 1504-2 standards.



TECHNICAL DATA

Di Leo production facility, Matera (Italy)

Period of construction: 1990s

Period of the intervention: 2012-2016

Intervention by Mapei: supplying products for concrete repair, for protecting and finishing masonry walls, and for building resin floors

Design: Nicola Lomurno

Client: Pietro Di Leo SpA

Works Direction: Nicola Lomurno

Main contractor: Edil Tecno Group

Mapei distributor: Edil Loperfido

Mapei coordinators: Daniele D'Ippolito, Franco Dragone, Michele Cannarile, Achille Carcagni, Mapei SpA (Italy)

MAPEI PRODUCTS

Concrete repair: Mapefer 1K, Planitop Smooth & Repair, Planitop Smooth & Repair R4
Sealing joints: Mapeflex PU40, Mapeflex PU45, Mapefoam, Primer AS

Protecting and painting walls: Elastocolor Paint, Quarzolite Base Coat

Building resin floors: Eporip, Mapefloor System 32 (Primer SN, Quartz 0.5, Quartz 0.25, Mapefloor I 300 SL, Mapecolor Paste).

For further information visit www.mapei.com



PALERMO: 2018 ITALIAN CAPITAL OF CULTURE

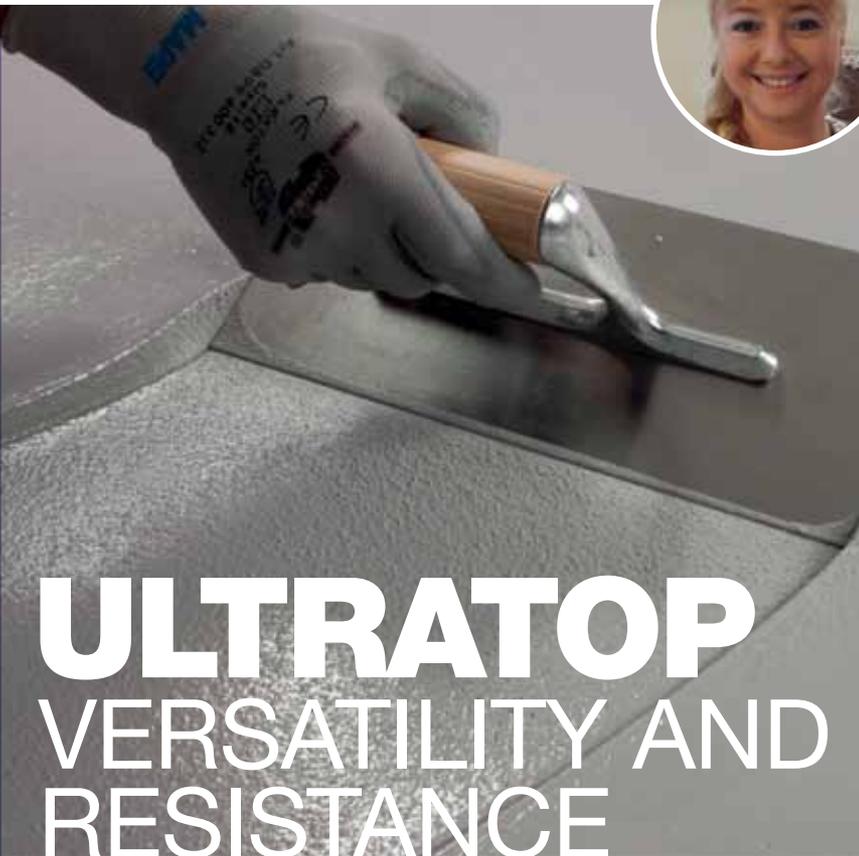


Matera is not the only place to have received important recognition. Palermo has been made the 2018 Italian Capital of Culture.

“Palermo is the city that has changed most in the world over the last few years, a cultural change we want to safeguard for years to come. **Palermo is not just an old city, it is also a welcoming place that is healthy and peaceful.** It also embraces other cultures from distant parts that coexist here in Palermo”. That is what the Mayor of Palermo, Leoluca Orlando, had to say when he opened the year's celebrations and events on 29th January. The City Council and other official partners are organising almost 800 events in addition to over 50 international projects.

Unity, networking, integration and shared projects are the soundbites behind this schedule. The event's official logo is the letter 'P' written in Arabic, Hebrew, Phoenician and Greek to once again emphasise the city's role as a capital not just of Italy but the entire Mediterranean, a symbol of how to embrace different cultures.

We will be allocating plenty of space to this event in the next issue of *Realtà Mapei International*.



ULTRATOP

VERSATILITY AND RESISTANCE

FROM INDUSTRIAL SETTINGS TO MUSEUMS:
FUNCTIONAL FLOORING IN LINE WITH THE LATEST
TRENDS IN CONTEMPORARY DESIGN

ULTRATOP, the key product in the Ultratop System, is a rapid-setting and hardening, self-levelling mortar available in 6 different colours (light grey, white, beige, red, anthracite and standard). It is easy to apply with either hand tools or a pump and is used to form abrasion-resistant floor coatings between 5 and 40 mm thick. It is suitable for use in a wide variety of settings, which demonstrate the enormous versatility of this product. In this article we talk about Ultratop in more detail with the architect Giovanna Novella from Mapei, Mapei Technical Service for the Resin Flooring Line.

ULTRATOP was originally developed as a coating product for industrial settings where functionality is a key requirement. Which of its strong points encourage a client to choose this product as a coating in operational areas?

Amongst the key features of the product are undoubtedly its application speed

and rapid hardening properties. We all know how important it is to limit down times in production facilities as much as possible when carrying out maintenance work due to economic reasons. Thanks to the very rapid hardening properties of the mortar (which sets to foot traffic within a few hours of application), down times can be really short, an enormous advantage from an economic point of view.

Another characteristic that encourages the use of ULTRATOP in industrial settings is its very high resistance to abrasion. In fact, flooring made from ULTRATOP is highly suited in areas where wheeled vehicles are used frequently, such as logistics hubs, production areas, warehouses and production facilities in general.

Over the years, ULTRATOP has also been proposed as a coating product to create decorative floors in civil settings, such as homes,

showrooms and shops. Which trends in the market seem to confirm this choice in design?

In the last few years there really has been a clear increase in the use of ULTRATOP in all types of surroundings: from residential settings, which have more of a minimalistic look, to commercial surroundings and shops, especially retail chains, where the very nature of the material, its functionality and, at the same time, the various textures available with ULTRATOP, makes it a choice completely in line with contemporary design solutions, while at the same time maintaining the characteristics and performance properties of a very high quality product in terms of resistance and durability over the years.

Since it was originally developed, ULTRATOP mortar has formed the base for more specific products, such as ULTRATOP LIVING and ULTRATOP LOFT. How do these systems differ from their “progenitor”?

ULTRATOP, the “progenitor” of these systems, was originally formulated and offered specifically as a repair mortar for floors in industrial surroundings because of its good mechanical properties and high resistance to abrasion. ULTRATOP LIVING, on the other hand, also has excellent mechanical properties, but is more suitable for use in residential and commercial settings where attention to detail is particularly important for the end user. And lastly ULTRATOP LOFT, which is no longer a self-levelling mortar, but rather a trowellable paste that can be applied on vertical surfaces, has made quite an impact in residential settings for its connotation as a vital material for contemporary interior design: an innovative proposal in which colours, shades and various aesthetic effects guarantee the maximum reliability when creating seamless surfaces.

The ULTRATOP system has different uses according to the effect chosen: “natural”, “polished” or “Terrazzo alla Veneziana”. What kinds of surroundings would you

ULTRATOP contributed to renovate the floors at Leonardo da Vinci Science and Technology Museum in Milan.

recommend them for and how do they differ from each other?

This material is so versatile that it can be applied anywhere, in practically every type of setting we use on a daily basis. Over the last decade we have noticed that the “natural” effect version of ULTRATOP can be found in settings that go from mainly industrial to commercial and retail, and it has even been used in homes in more intimate, private and personal spaces. Presumably its use in such a vast array of settings may be explained by it being identified as a very high quality product and, at the same time, as a material with a natural, minimalistic and absolutely matric finish. The “polished” effect, as with the “Terrazzo alla Veneziana” effect, on the other hand, is an alternative to the traditional and more widely used “natural” effect. The polishing procedure for both versions basically changes the final finish compared with traditional ULTRATOP (in fact, you could say that it is as if ULTRATOP has had a “change of clothes”....) and you obtain surfaces which are smooth and shiny that reflect the light. Going into detail, the “polished” effect brings out a kind of “salt and pepper” look, caused by the aggregates contained in the product, while “Terrazzo alla Veneziana” floorings show the presence of polished natural aggregates (usually marble, granite or natural stone), amalgamated with ULTRATOP which, in this case, acts as a binder. The rapid curing cycle of ULTRATOP mortar, along with standardisation of the polishing process, makes this system a highly advantageous alternative to traditional “Terrazzo alla Veneziana” flooring with considerably shorter installation times and obvious and significant economic benefits.

If we look at “polished” and “Terrazzo alla veneziana” floorings made with ULTRATOP from a strictly decorative point of view, I would say their area of use would normally be within residential and commercial settings, such as apartments, shops, showrooms, churches, hotel lobbies, museums, supermarkets, etc.



» The high versatility of this material makes it suitable for application in all environments

Can the ULTRATOP solution only be adopted in new builds or may it also be applied in existing buildings?

ULTRATOP flooring may be applied in both new and existing buildings, as long as the substrate is in good condition and guarantees the minimum mechanical requirements for this type of flooring, such as stability (which means no movement), residual moisture content (when applied on floors), compressive and flexural strength, compactness, etc. When installing flooring on new substrates, such as cementitious screeds, the state of curing must be carefully checked to rule out the possibility of movement caused by hygrometric shrinkage. For installations on existing flooring, on the other hand, the quality of the surface must be thoroughly checked, and when installing this system on ceramic floors, for example, the quality of the ceramic tiles must be checked and they must be soundly bonded to the substrate. It is fundamental that all the above points are checked correctly and accurately to guarantee good results from the finished flooring.

ULTRATOP and ULTRATOP LOF cementitious floorings have been applied successfully in two famous museums, and precisely in the Leonardo da Vinci Museum of Science and Technology in Milan and

the Innocenti Museum in Florence. An innovative choice with the ability to blend in with an historic building. Would you agree?

Absolutely, I fully agree! The choice to use ULTRATOP flooring in these kinds of settings certainly helps to emphasise the idea of continuity inside structures with such historic/artistic characteristics. In fact, in both the Museum of Science and Technology and the Innocenti Museum, once the ULTRATOP flooring had been installed, there was more sense of harmony; they became more orderly, silent and neater and, while wandering through the display areas, visitors notice a pronounced sensation of reassurance. What is more, the materiality of the surface of the floors is not perceived as an element that separates or as a stand-alone component of the museums; it is identified as stylistic continuity of their original structures.

A number of years have gone by since the flooring was installed in both museums and, from time to time, I find myself telling people about the advantages and properties of these floorings.

So I would invite everybody to see them for themselves and check their condition personally so they can see that, when we talk about ULTRATOP, we are talking about a formulate with extremely high mechanical properties, functionality and durability over the years, with the ability to show off all of its eclecticism and versatility, and how it continues to meet the requirements of the market with great design solutions.

Arch. Giovanna Novella. Technical Assistance for Resin Flooring Line, Mapei SpA



SEINE MUSICALE A GREAT STAR ON STAGE



ELEGANT FLOORS FOR A FUTURISTIC CONCERT HALL IN PARIS

The Seine Musicale is a large building with a surface area of 36,500 m² located in the south-western Paris suburb of Boulogne-Billancourt. Enclosed within its unique architecture is a large cultural space dedicated entirely to music, from classic to electronic and from jazz to world music. Inaugurated in April 2017 after more than two years of work, its doors were opened to the public on the notes of the folk singer Bob Dylan.

The Seine Musicale is on the island of Seguin on the River Seine and was built on the site of the former Renault car factory. After a long past dedicated to industry, the time had



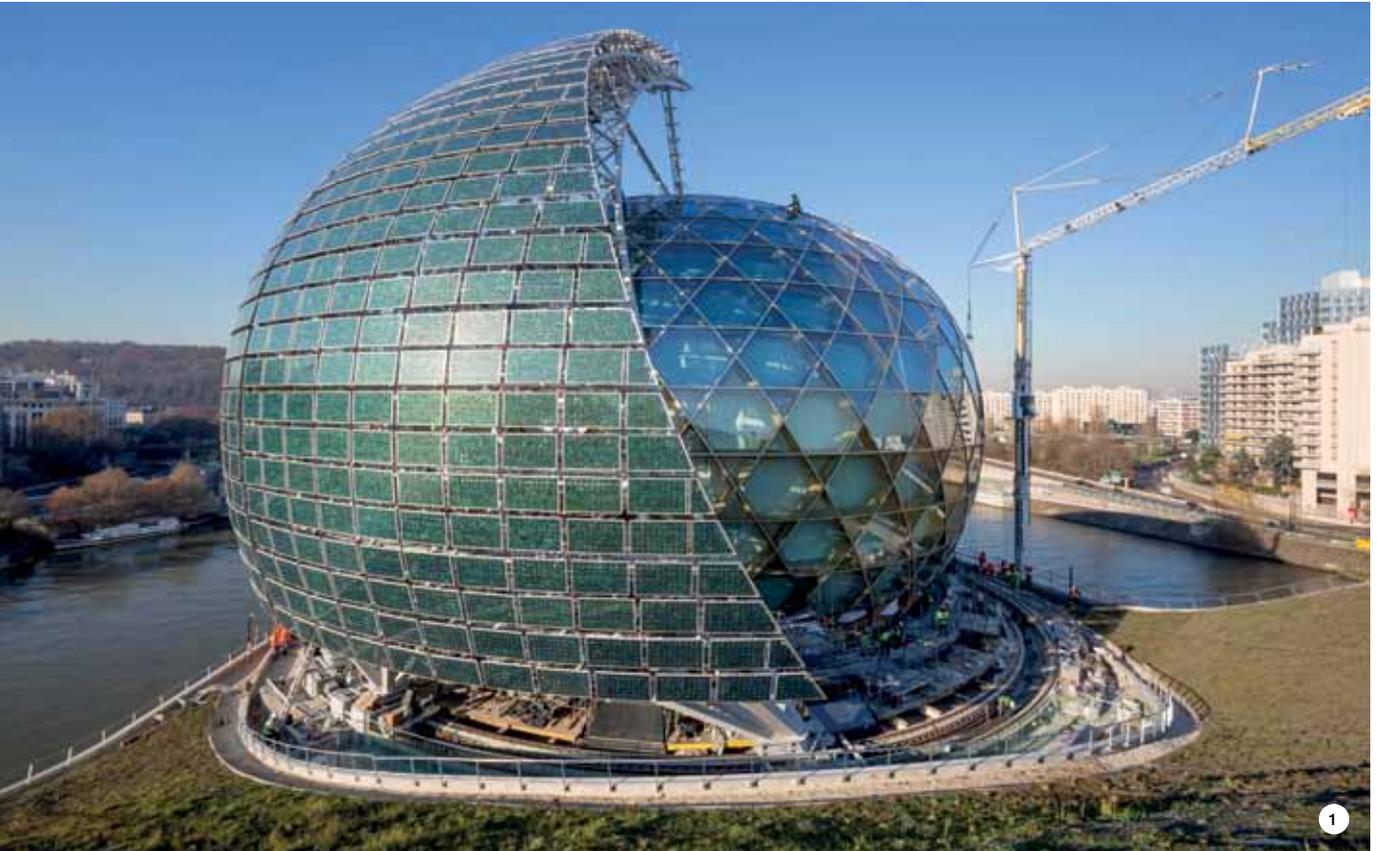
come for the island to start a new chapter and provide space for an artistic and cultural project worthy of this special place. The new building has managed to respect the identity of the past while, at the same time, bring an innovative touch, thanks to the elegant spherical form of the auditorium and its solar sails.

ORIGINAL ARCHITECTURE ON THE SEINE

The complex is 330 m long and brings to mind a transatlantic liner forging its way through the waves. It is the work of the architects Shigeru Ban (winner of the Pritzker Architecture Prize in 2014) and Jean de Gastines, who in the past had collaborated in the construction of the Pompidou Centre in Metz. Construction of the Seine Musicale was an initiative of the

Conseil Départemental des Hauts-de-Seine (Hauts-de-Seine Regional Council) and its aim was to bring music within everyone's reach, to be open to all genres of music and to promote the creation, teaching and spread of music. Inside the complex there are recording studios, rehearsal rooms and, above all, two concert halls: a large hall with 6,000 seats and an auditorium with 1,500 seats.

The crowning glory of the construction is its majestic auditorium, with its curved forms set in a shell of woven wood and partially enveloped by a 45 m tall mobile sail made up of solar panels. The sail rotates around the auditorium following the movements of the sun and protects the structure from direct sunlight. The image of this architectural jewel is reflected in the water, as if floating on the Seine.



1

MAPEI SOLUTIONS FOR CEMENTITIOUS FLOORS

Commissioned by Bouygues Bâtiment Ile-de-France, the flooring company Prima Pavimenti Speciali – which has a long history of working with Mapei all over Europe – installed the floors within the tight schedule imposed by the contract to the complete satisfaction and expectations of the main contractor and architects.

ULTRATOP SYSTEM was chosen for the cementitious flooring laid in the area outside the concert hall and auditorium: more than 5,000 m² of surface stretching for 280 m and subjected to intense pedestrian traffic. This choice fulfilled both the aesthetic and architectural requirements of a project that was to include areas with a concrete look.

Applied over a screed with underfloor heating, this system required preparation work on the substrate to be carried out very

carefully using a grinding system equipped with diamond grinding disks. The surface was then treated with a coat of PRIMER SN, two-component fillerized epoxy primer, broadcast with QUARTZ 1.2 to create a perfect bond with the following layer of ULTRATOP self-levelling, ultra-quick hardening mortar in its light grey color shade. The product was applied with a pump to form a homogeneous finish and to optimise its yield.

PHOTO 1. The jewel in the crown of this construction is the sail that is made up of solar panels and can rotate around the auditorium.

PHOTO 2. Applying ULTRATOP self-levelling mortar with a pump.

PHOTO 3. The floors built with ULTRATOP after completion of the works.

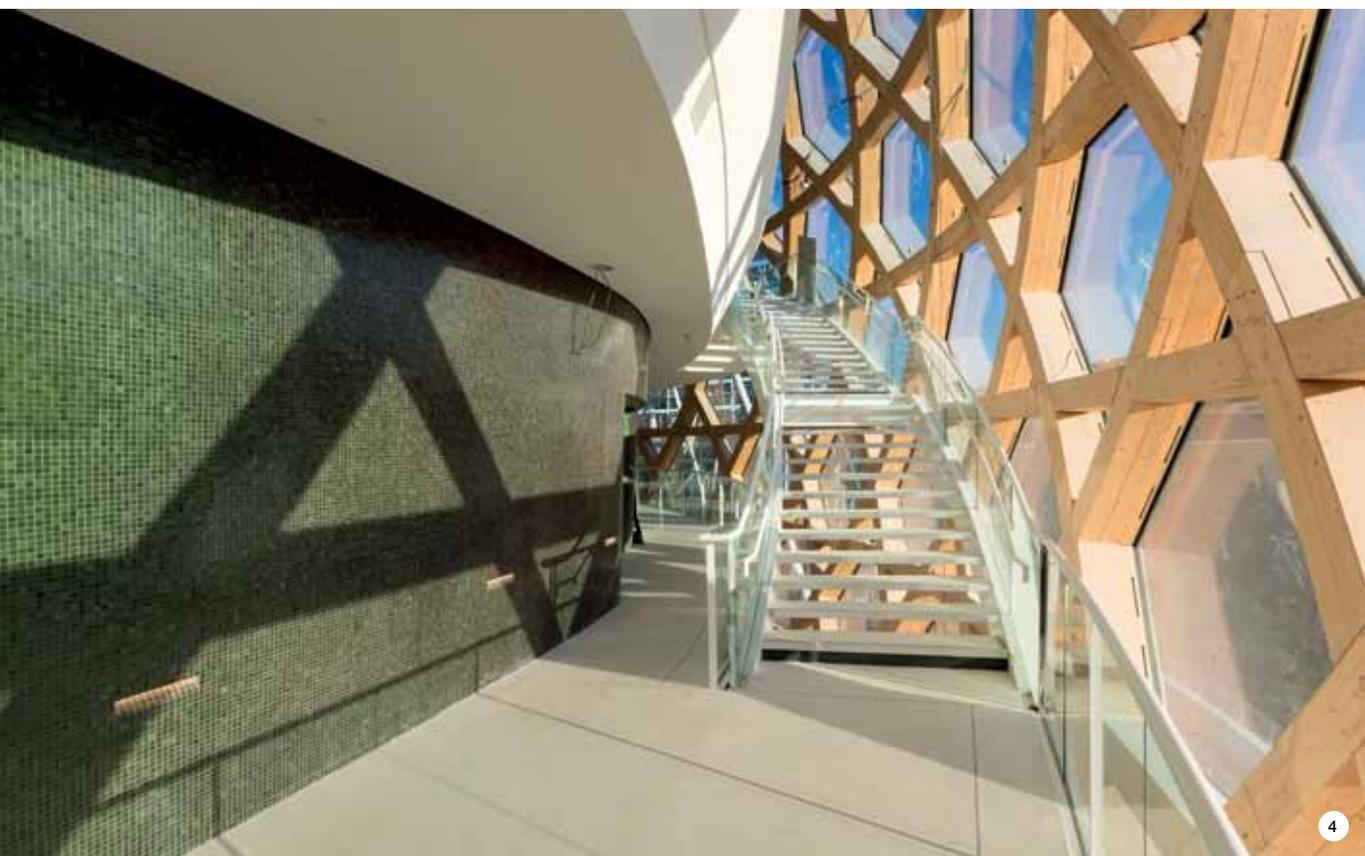
PHOTO 4. MAPEFLOOR SYSTEM TERRAZZO was used to finish the corridors next to the concert hall and the auditorium.



2



3



4

The transparent finishing products MAPEFLOOR FINISH 52 W and MAPEFLOOR FINISH 58 W were then applied to provide protection against stains and a higher level of resistance to abrasion.

The risers for the stairs were coated with ULTRATOP LOFT W, one-component, trowellable, fine-textured cementitious paste for decorative floors with a trowelled or mottled effect, with a final finish as similar as possible to the horizontal parts.

ELEGANCE AND SOBRIETY WITH “TERRAZZO ALLA VENEZIANA” FLOORINGS

The corridors outside of the auditorium, which run around the sumptuous wood and velvet-adorned concert hall, have a floor finish which is worthy of the architecture of the centre and the surrounding view.

The flooring has been created using MAPEFLOOR SYSTEM 35 F (which is available in France as MAPEFLOOR SYSTEM TERRAZZO) to obtain “terrazzo alla Veneziana” floorings by applying a layer of an epoxy formulate mixed with natural aggregates. In this case the aggregates chosen were marble, mixed

with the two-component epoxy formulate MAPEFLOOR I 300 SL, which was then pigmented with MAPECOLOR PASTE colouring system (in the colour RAL 9010).

The system was applied on a substrate that had previously been treated with PRIMER SN. Once the formulate had hardened completely, the surface was grinded and polished several times until a smooth, shiny finish had been created.

“Terrazzo alla Veneziana” is a type of flooring which was first used in the 13th century in prestigious palaces and residences in Venice and near-by areas. It arouse renewed interest later on, especially in the 1930’s thanks to the art deco movement. Today, MAPEFLOOR SYSTEM 35 F allows unlimited design and color options thanks to the use of various types of marble aggregates, quartz and glass. Resistant and aesthetic, it is particularly suitable for public areas characterised by high volumes of pedestrian traffic such as airports, railway stations, shopping centers, museum, etc..

This article was taken from issue N° 47 of Mapei et Vous, the magazine published by the Group’s subsidiary Mapei France, whom we kindly thank.

TECHNICAL DATA

La Seine Musicale,

Boulogne-Billancourt, France

Period of construction:

2014-2016

Intervention by Mapei:

supplying products for building resin and cementitious floorings

Client: Tempo Ile Seguin/
Bouygues Bâtiment Ile-de-

France

Design:

Shigeru Ban
Architects Europe & Jean de
Gastines Architectes

Main contractor:

Bouygues Bâtiment Ile de
France

Installation company:

Prima Pavimenti Speciali

Mapei coordinator:

Philippe Méric (Mapei France)

Photos: Laurent Blossier,
Patrick Borderie, Didier Boy de
la Tour, Ludovic Marhiovanni,
Philippe Méric

MAPEI PRODUCTS

Preparing the substrates:

Primer SN, Quartz 1.2

Building cementitious floorings:

Ultratop Loft W, Ultratop,

Mapefloor Finish 52 W,

Mapefloor Finish 58 W

Building resin floors: Mapefloor I
300 SL, Mapecolor Paste.

For further information on

products see www.mapei.com

and www.mapei.fr



FLOORING PLAYS ITS PART IN ROOM DESIGN

AT ULBRICH KITCHEN SHOWROOM FLOORINGS
WERE RENOVATED WITH ULTRATOP

For more than 40 years, Ulbrich kitchen studio has been creating kitchens for customers. When visiting the Ulbrich showroom in Heinersreuth (Central Germany), customers expect worlds of experience when it comes to cooking. The kitchens on show are designed complete with floorings, walls, and decorations. During a guided tour through the spacious exhibition, you can see, touch and try out the “ingredients” for your dream kitchen and, above all, discover new ideas. Countless sample fronts and worktops, unusual combinations as well as different floor and wall materials give an impression of how your dream kitchen could look like at home. In summer 2016 the showroom was quickly transformed by giving the flooring a stylish update based on both contemporary design and modern functionality.

It took only a short time to give the facility a dynamic atmosphere with the new flooring. The new floor completed a stylistic and equally functional task which supports the entire presentation concept without being intrusive and distracting from the actual presentation of the goods.

Indeed, it is not a floor covering in the classical sense, but a visible flooring compound, which Mapei designed especially for restaurants, hotel lobbies, museums and galleries, as well as for demanding residential areas, locations with load demands and high foot traffic: ULTRATOP is an innovative stylish floor coating whose colour shades, simplicity and aesthetic effect make modern interior architecture concepts possible.

APPEARANCE COUNTS AS WELL AS PERFORMANCE

The innovative coating system allows to create seamless, perfectly even surfaces for floors. A beautiful anthracite floor was chosen for the kitchen showroom, which in a modern environment expresses a clever mixture of aesthetics and functionality. And with its cementitious material effect, it demonstrates an original possibility to go beyond the conventional in kitchen flooring design.

The requirements for the flooring in the show kitchens are very high: high foot traffic due to numerous customers, as well as the strain caused by the changes of exhibition pieces, means a lot of demands are placed on the flooring. A uniform and transparent floor finish was to be ensured for the long term. No problem for ULTRATOP, and the floor-layer in charge of this project is a fan due to its easy processability: before applying the flooring compound, he prepared the substrate with PRIMER SN, two-component epoxy primer, so that ULTRATOP could be installed quickly using a pump.

Optics are naturally important to the operators of the Ulbrich kitchen showroom, but functionality and cost-effectiveness count too: an ULTRATOP floor is highly resistant to abrasion



LEFT. The cementitious floors, completed with ULTRATOP, add a touch of elegance to the kitchens displayed in the Ulbrich showroom.

ABOVE. The use of ULTRATOP contributed to create stylish, durable and resistant floors, a proper stage to spotlight modern and stylish kitchens.

and allows layer thicknesses of 5-40 mm.

Due to the final coating with MAPEFLOOR FINISH 52 W (a polyurethane finishing product in water dispersion), as well as MAPEFLOOR FINISH 58 W (an aliphatic, transparent or coloured, matt polyurethane finish) in the highly-frequented areas, the floor is highly wear resistant and easy to clean.

IN THE SPOTLIGHT ULTRATOP

It is a self-levelling product for levelling and smoothing new or existing concrete and ceramic substrates in thickness from 5 to 40 mm, to make them suitable for heavy pedestrian use in shopping centres, offices, shops, showrooms and areas where rubber-wheeled vehicles are in use.

ULTRATOP may be left as a finished floor due to its high mechanical strength and resistance to abrasion and is suitable for numerous applications in the decorating sector of buildings for civil use. After setting, which takes

place in only a few hours, ULTRATOP has a high level of compressive and flexural strength, bonds perfectly to the substrate and dries quickly so that any further finishing coat may be applied after a very short time.

ULTRATOP is classified as **CT-C40-F10-A9-A2_n-s1** according to **EN 13813:2002** standards.



TECHNICAL DATA

Ulbrich Küchen OHG,
Heinersreuth (Germany)

Period of construction:
1960s

Period of the renovation:
2016

Intervention by Mapei:

supplying products for preparing the substrates and laying cementitious floors

Client: Ulbrich Küchen OHG

Main contractor: Ulbrich Küchen OHG

Flooring contractor:
Christian Neumaier

Mapei distributor:

D&W GmbH Holz- und
Farbenfachhandel

MAPEI PRODUCTS

Preparing the substrates:

Primer SN, Quartz 1.2

Laying cementitious floors:

Ultratop

Laying the top coat: Mapefloor
Finish 58 W, Mapefloor Finish
52 W,

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



THE NEW LAMINAM PRODUCTION FACILITY

AN HISTORICAL MANUFACTURING WORKS HAS BEEN COMPLETELY RENOVATED WITH MAPEI RESIN FLOORS

An investment of 35 million Euros, a total surface area of 45,000 m² and a daily production capacity of 16,600 m² of ceramic slabs: these are just some of the record figures for the new Laminam SpA production facility inaugurated on the 27th of September, 2016, in Borgo Val di Taro, in the Province of Parma, in Northern Italy.

This historical ceramic manufacturing works, which was initially owned by Edilcuoghi and then became part of the Turkish industrial group Kale, will be dedicated exclusively to the production of large-size ceramic slabs (3,240 mm x 1,620 mm). It was bought by Laminam in December 2015 and completely renovated and recommissioned in just 8 months.

Numerous Mapei systems also played a key role in this important intervention. "It was a business venture that we took on with great enthusiasm", said Franco Stefani, President of Laminam, in his inaugural speech to a crowd of more than 400 guests. "We bought the works and we have completely re-modernised it, from the production equipment to the aeration and ventilation system and from the windows to the floors. We have replaced everything and the only thing that remains is the actual structure, the skeleton of the works".

The new production facility, which stretches for a length of 400 m, is equipped with cutting-edge machinery. Its strong point, and the very heart of the production system, is the





TO THE LEFT. An external wall with cracking was first treated with MAPETHERM FLEX RP skimming paste, then painted with ELASTOCOLOR PAINT.

BELOW. COLORITE MATT was chosen to paint the ceilings, while ELASTOCOLOR WATERPROOF paint was applied around the base of all the pillars. Floors were built using MAPEFLOOR SYSTEM 32.

Lamgea moldless press, which has revolutionised the use of ceramics, opening up new user and market sectors, including that of interior design. The layout of the new facility was designed to house up to three kilns.

HIGH-STRENGTH RESIN FLOORS

Mapei's part on this site was the installation of new resin floors. The existing substrate was a concrete floor with cracks of various sizes (from around 0.5 to 2 mm).

The client initially intended sealing the cracks with MAPEFLOOR I 910, epoxy binder fillerized with QUARTZ 0.25 quartz sand, to repair the critical areas in the floor.

However, during the first site inspection with the works director, Alessandro Ganapini, Mapei Technical Services proposed an alternative and complete solution: MAPEFLOOR SYSTEM 32. After carefully weighing up the options and carrying out a series of tests directly on site, it became the preferred option. Indeed, with this particular system, apart from repairing the critical areas, floors are easier to clean and they have a more attractive finish.

MAPEFLOOR SYSTEM 32 is a multi-layer epoxy coating system that forms a coating from 3 to 3.5 mm thick and is used for surfaces subjected to medium-high volumes of traffic where high resistance to chemicals is also required. It is also resistant to frequent cleaning cycles, wear caused by trolleys and moving vehicles and has a particularly effective non-slip finish. The system is composed of PRIMER SN, MAPEFLOOR I 300 SL, QUARTZ 0.5 and QUARTZ 0.25.

Because of the large number of cracks in the concrete, the first coat of resin, a mixture of MAPEFLOOR I 910 two-component epoxy binder for resin coatings and QUARTZ 0.5 quartz sand, was reinforced with a 90 g 4x4 mm glass fibre mesh.

The surface was then treated with PRIMER SN, two-component fillerized epoxy mortar mixed with QUARTZ 0.5.

For the following layers and the finishing coat, the products used were MAPEFLOOR I 300 SL and MAPECOLOR PASTE colouring system.

MAPEFLOOR I 300 SL is a two-component epoxy formulate with a high solids content and is used to form self-levelling or multi-layer resin coatings with an attractive smooth or non-slip surface. It is highly resistant to chemicals and abrasion.

At +25°C MAPEFLOOR SYSTEM 32 sets to foot traffic after 16





hours, while fork-lifts and trolleys may drive on the floor the day after applying the final coat.

ELASTIC AND PROTECTIVE FINISHING COATS

Other work was also carried out within the short time required for this intervention, including painting all the ceilings (60,000 m²).

Once the substrates had been cleaned and treated with MALECH bonding promoter, operatives from the company B.C.C. 2000 Srl applied two coats of COLORITE MATT highly-transparent water-based paint using an airless spray system.

The same company also applied another two Mapei systems: the first was ELASTOCOLOR WATERPROOF, waterproof, easy-to-clean acrylic paint, around the base of all the pillars to make them more resistant to washing cycles.

The second solution was applied on an external wall that had widespread cracking. The first step was to apply MAPETHERM FLEX RP, a cement-free, fibre-reinforced, lightweight skimming paste for internal and external use, that is also resistant to biological agents.

The surface was then painted with ELASTOCOLOR PAINT elastomeric, crack-bridging, permanently flexible, protective paint, with high resistance to chemicals, for internal and external surfaces.

This was an important intervention to re-launch the production of quality products in a sector with which Mapei has a traditional bond, that of ceramics.

IN THE SPOTLIGHT

MAPETHERM FLEX RP

It is an organic skimming basecoat characterised by high elasticity, made from acrylic resins in water dispersion, selected fillers, glass micro-spheres and polypropylene fibres. It also contains other additives that make it resistant to microorganisms and considerably reduce application times.

MAPETHERM FLEX RP may be used to repair cracked walls on any building, including those already painted. It

may also be used to repair rendered walls to give them an even surface with no imperfections. It is particularly recommended for protecting critical areas such as wainscots, communal areas in apartment buildings and areas open to the public exposed to impact and stresses.



TECHNICAL DATA

New Laminam production facility, Borgo Val di Taro (Italy)

Period of construction: 1970s

Year of intervention: 2016

Intervention by Mapei: supplying products to install new resin floors and paint ceilings, pillars and an external wall

Client: Laminam SpA

Design: Alessandro Ganapini

Works director: Alessandro Ganapini

Main contractor: Resinsystem Italia Srl

Coating contractor: B.C.C. 2000 Srl

Mapei distributors: G.E.S., Resinsystem Italia

Mapei coordinator: Carlo Alberto Rossi, Mapei SpA (Italy)

MAPEI PRODUCTS

Building resin floors: Mapefloor I 910, Mapefloor I 300 SL, Mapecolor Paste, Quartz 0.5, Quartz 0.25, Primer SN
Painting ceilings, pillars and an external wall: Colorite Matt, Elastocolor Paint, Elastocolor Waterproof, Mapetherm Flex RP

For further information on products see www.mapei.com

Mapefloor[®] System

Systems for high-performance
industrial floors

Post office – Peschiera Borromeo (Italy)

Mapefloor System

Durable, functional systems which are quick and safe to install and meet all the requirements for industrial environments.

Products and systems for creating resin floorings with high mechanical strength, high resistance to chemicals and low emission level of VOC, ideal for renovating old damaged floorings as well as for building new floors.



APPLYING **Mapefloor I 300 SL** BY TROWEL





59TH UFEMAT CONGRESS



NEW DIGITAL TECHNOLOGIES FOR THE EUROPEAN DISTRIBUTORS OF BUILDING MATERIALS WERE IN THE SPOTLIGHT IN STOCKHOLM

In 2017 it was Sweden's turn to host the annual congress of Ufemat, the European Association of National Builders' Merchants Associations and Manufacturers.

The 59th edition of the congress was held in Stockholm from the 5th to the 7th October and was attended by the representatives from 19 European countries. Mapei, which has always been a close ally of the distributors of building materials, is Structural Main Sponsor of Ufemat and, every year, supports this event which sees it working alongside distributors so that, together, they can successfully face up to the challenges set by the global market and strengthen the bond and synergy between industry and the distribution network.

It was the first time that Stockholm has welcomed this important event and it was the first time that Ufemat held a congress at the premises of a building materials merchant: Fabian Fredell.

Ufemat was founded in 1958 as the national associations of distributors of building products decided to create an European Confederation able to protect the interests of this important sector on an European scale. Today Ufemat groups together 19 national associations. Italy is represented by Federcomat (the Italian Federation of Traders in Concrete, Brick and Building Materials), whose President Giuseppe Freri is one of Ufemat's Past Presidents and currently covers the role of Vice President of the Association.

The representatives of the European building materials traders and manufacturers focused together on the added value of the building materials merchant and on the importance of e-commerce for their market.

AT THE BEGINNING OF A REVOLUTION

In his opening speech, Antonio Ballester López, current President of Ufemat, underlined that "We are at the beginning of a revolution that is fundamentally changing the way we live, work and relate to each other [...]. The scale and scope of change explain why disruption and innovation feel so acute today. The speed of innovation in terms of both its development and diffusion is faster than ever". Technological innovation has always destroyed some jobs, which it replaces in turn with new ones in different activities and possibly other places. The World Economic Forum's *Future of*

Jobs Report highlights the widespread disruptions in the labor markets. The technological innovations over the coming years will lead to an automation of highly repetitive tasks, which will cause the loss of many jobs. At the same time, new jobs will be created by these innovations. In order to be prepared to meet these challenges, companies need to build a new approach to workforce planning and talent management, where better forecasting data and planning metrics can anticipate the skills that will be needed in the future.

"Maybe we need to rethink the weight and relationship of two main factors: the role of human resources as a source of real value for our business and how to cope with the tech-revolution", Ballester López explained.

AN EXAMPLE FROM THE USA

The President of Ufemat also examined how much of the digital time is used by the customers of building materials companies. "Online sales operate in two ways: retail and wholesale. Only online retail sales are growing more than 20% worldwide every year. What to do? Our colleagues on the other side of the Atlantic ask themselves the same questions as we do, and some are already finding answers to these questions. Home Depot is the world's largest home improvement retailer and owns more than 2,200



GIUSEPPE FRERI, Past President of Ufemat with one of the participants in the Congress.



ANTONIO BALLESTER LÓPEZ, current President of Ufemat.



MARNIX VAN HOE, Secretary General of Ufemat.

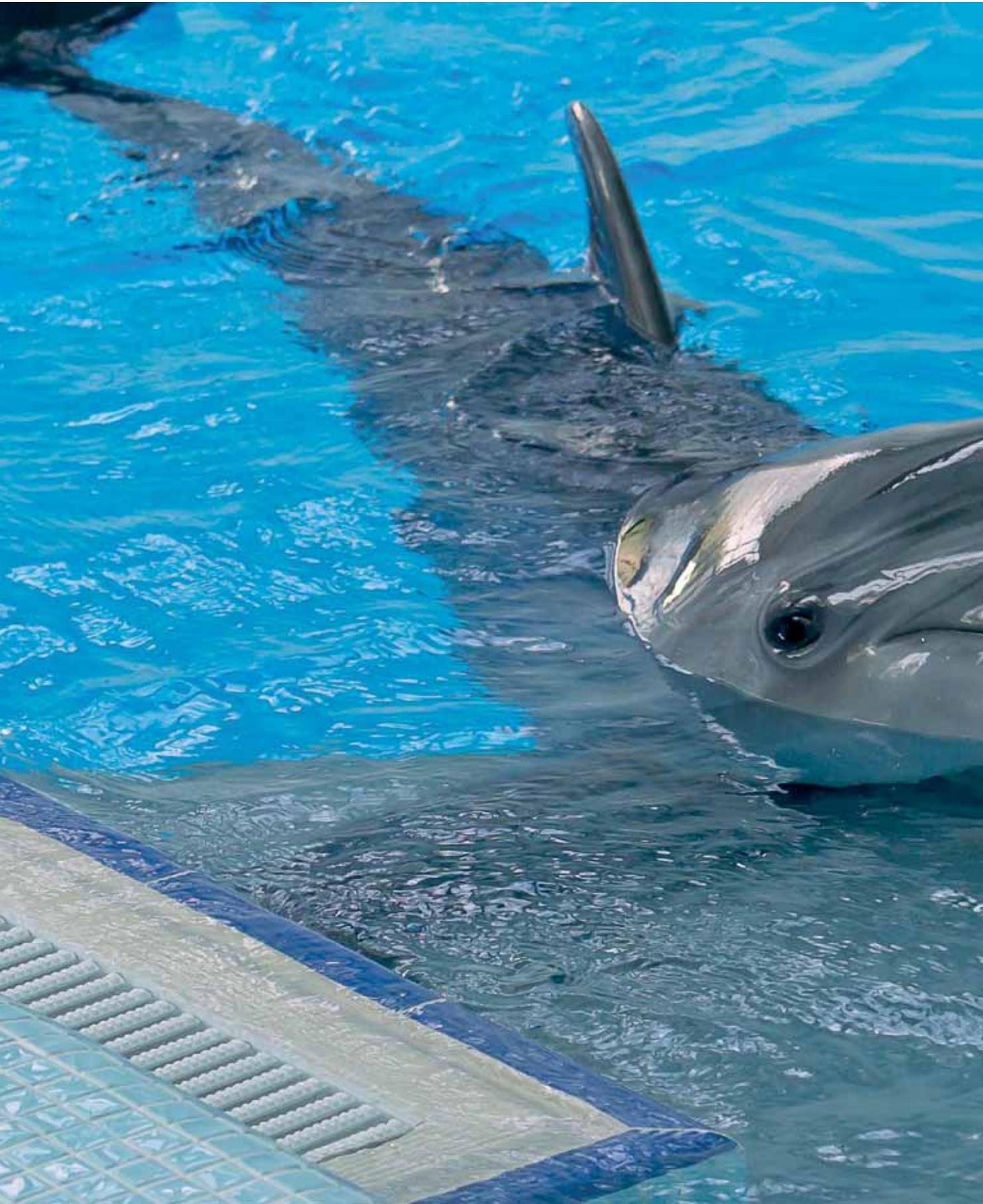
stores across North America. It reported a 19% year-on-year increase in online sales in 2016. The retailer has said e-commerce now represents 5.9% of its total sales. The Home Depot generated 94.595 billion US dollars in revenues in 2016 without having opened any new stores in the last three years", Ballester López stated.

The Home Depot has been named one of the world's most innovative companies. It was honored for its bold e-commerce strategy and efforts to integrate the digital and in-store shopping experience. These are the steps to success: firstly the company rolled out an updated homedepot.com site and a redesigned app, including new features that make it easy for customers to complete their orders in-store or at home; secondly, the Home Depot is introducing new products and technologies that are making it easier than ever for customers to interact with their homes and make them more comfortable, more efficient and more secure; and, thirdly, the retailer's mobile app leverages AR (Augmented Reality) technology to let customers place virtual items into the real world via their phones, and it also uses voice-activated search and in-store GPS to help shoppers find the exact product they need.

Ballester López noticed that a generational transformation gives birth to new clients, with different values. "All of us must adapt and compete to give them the best possible responses. Ufemat must be the necessary point of knowledge exchange to make us stronger, likewise the European construction must be a common project to make Europeans stronger in the face of the current challenges [...]. We cannot move slowly. 'In the new world it is not the big fish which eats the small fish, it's the fast fish which eats the slow fish', said Klaus Schwab, founder and Executive Chairman of the World Economic Forum", López concluded.

All the following speeches similarly highlighted that e-commerce is growing and can become an important added value for the building materials distributors. The next edition of the Ufemat Congress will take place in Lisbon (Portugal) on 25th-27th October, 2019.





DOLPHINIA DOLPHINARIUM IN NOVOSIBIRSK

HIGH-QUALITY BUILDING MATERIALS FOR A CHALLENGING ENVIRONMENT

In 2016, in the territory of the Novosibirsk Zoo, a facility which is absolutely unique for Siberia was opened: the Dolphinia Center for Oceanography and Marine Biology. It includes an oceanarium with one of the largest collections of inhabitants of the Russian seas and oceans, and a dolphinarium where performances of Indo-Pacific bottlenose dolphins, beluga whales, South American sea lions and the Pacific walrus take place. The total surface area of the premises is over 8,000 m². The complex comprises 11 pools and aquariums with a total water volume of about 2.7 million liters.

The "Dolphinia" hall can accommodate 650 visitors. The special design of the dome made it possible to create the right balance of daylight for the inhabitants of the center.

In February 2017, a center for swimming with dolphins opened in the facility and became the favorite entertainment place for children and adults.





MAPEI SOLUTIONS FOR THE POOLS

During the construction of the Dolphinarium, special requirements were set regarding the quality of the materials used for waterproofing and building the aquariums and pools, because of the aggressive effect of salty seawater on the facilities. The use of several Mapei solutions in the pools ensured not only the durability of structures and their resistance to aggressive agents, but also environmental safety for the fishes and marine animals.

During the works, the Mapei technicians faced a number of complex problems. It was necessary to select suitable materials that could guarantee quality anchoring of embedded elements in the basins, reliable waterproofing of substrates, proper preparation of surfaces

before installing ceramic tiles and mosaics, and durable grouting of joints.

The anchoring of the embedded parts in the basins was carried out using MAPEFILL 10, a high-flow, non-shrink, cementitious anchoring grout. This product, which is manufactured and distributed in Russia by ZAO Mapei, forms high-strength mortar with excellent resistance to frost and water.

12 tons of TOPCEM PRONTO ready-to-use, normal-setting, controlled-shrinkage mortar with high thermal efficiency were used to build quick-drying screeds for the pools.

MAPEBAND rubber tape with alkali-resistant fabric was used for waterproofing corners between adjacent walls and between walls and floors before applying MAPELASTIC two-component, flexible cementitious mortar for water-

proofing the basin of the pool used for the shows, as well as the substrates in the pools for swimming with dolphins and those for walrus and seals.

Substrate levelling on the walls of the swimming pool was carried out using NIVOPLAN PLUS, a levelling compound which is manufactured and distributed in Russia by ZAO Mapei, which was admixed with PLANICRETE synthetic rubber latex to improve its adhesion and mechanical properties.

As for the installation of mosaic and ceramic tiles in various areas of the facility, ZAO Mapei proposed several high-performances solutions. ULTRALITE S1, deformable, lightweight cementitious adhesive with no vertical slip, long open time, Low Dust technology and extremely high yield, was applied in the basin of the pool for swimming with dolphins



ABOVE. The pool used for shows was completed using MAPEBAND and MAPELASTIC for waterproofing the substrates and GRANIRAPID for bonding ceramic tiles.

RIGHT. The substrates of the pool for swimming with dolphins were treated with NIVOPLAN PLUS+PLANICRETE and MAPELASTIC, before installing ceramic tiles with ULTRALITE S1.

IN THE SPOTLIGHT

TOPCEM PRONTO

It is a pre-blended, ready-to-use mortar with normal setting and controlled shrinkage, based on a special hydraulic binder and graded aggregates. It is ideal for forming unbonded and bonded screeds on new and existing slabs in interiors and exteriors prior to installing wood, PVC, linoleum, ceramic tile, natural stone, carpet or other floor coverings in areas where fast-drying screeds are required in order to complete floorings in a short time. TOPCEM PRONTO is characterized by high thermal conductivity which makes it particularly suitable for laying heated screeds. Screeds prepared with TOPCEM PRONTO in accordance with the specifications described in its technical data sheet are classified as **CT-C30 -F6-A1_n**, in compliance with the European standard **EN 13813**.



and in the adjacent areas.

GRANIRAPID two-component, deformable, quick-setting and drying cementitious adhesive was used to bond ceramic tiles on the surfaces subjected to heavy loads, such as in the area adjacent to the pool for shows and the walrus pool, as well as in the dolphinarium hall.

KERABOND cementitious adhesive was used to install ceramic tiles in the remaining areas of the facility, after admixing it with ISOLASTIC elasticising latex to form a highly deformable mix with extended open time.

ULTRACOLOR PLUS anti-efflorescence mortar with water-repellent DropEffect® and mould-resistant BioBlock® technology was selected for grouting tile joints in the basin of the pool for walruses and seals and in the adjacent area, as the product is able to offer high protection against mould.

This article was taken from *Mir Mapei*, no. 22, the magazine published by ZAO Mapei, whom we would like to thank.



TECHNICAL DATA

Dolphinia Dolphinarium,
Novosibirsk (Russia)

Period of construction:
2014-2016

Period of the Mapei intervention: 2015-2016

Client: LLC "Aquatoria"

Design: JSC "Engineering"

Main contractor:

LLC "PSO ASK"

Installation company: LLC
"PSO ASK"

Mapei distributor:
TRITON (New Construction
Technologies)

Mapei coordinator: Eugene
Lebedev, ZAO Mapei (Russia)

MAPEI PRODUCTS

Anchoring works: Mapefill 10*

Preparing the substrates:

Topcem Pronto, Nivoplan
Plus*+Planicrete

Waterproofing the pool basins:

Mapelastic, Mapeband

Bonding mosaic and ceramic

tiles: Ultralite S1, Granirapid,

Kerabond + Isolastic

Grouting joints: Ultracolor Plus

*These products are manufactured and distributed on the Russian market by ZAO Mapei.

For further details on products visit www.mapei.com and www.mapei.ru



THE EVOLUTION OF THE “WHITE GLUE”

VINAVIL'S “GREEN” CHOICE: AN EXAMPLE OF HOW THE POLYMER EMULSION MANUFACTURING SECTOR CAN EVOLVE TOWARDS SUSTAINABLE DEVELOPMENT

Vinavil “white glue” is a polyvinyl acetate in water emulsion, invented in the first half of the 20th century in the research centre of the Montecatini chemical company, located in Villadossola, in the province of Verbania (Northern Italy). The name Vinavil is an acronym of both the type of the chemical and of its origin: VIN-yl A-cetate VL-ladossola. Vinavil SpA, a former company of the Montedison-Enichem group, acquired by the Mapei Group in 1994, is nowadays a multinational that, with production facilities in Villadossola and Ravenna (Central Italy), is a leading company for the production of polymer emulsions. The well known red and white pot, along with the line of other retail products, is just part of a wide and varied range of polymers produced mainly for the industrial market. The types of industries the company supplies includes sectors such as adhesives, coating, construction materials, textiles and additives for the food industry [1].

The evolution of the white glue, an adhesive particularly suitable for bonding wood, paper, fabric, cork and porous materials in general, can be considered the symbol of the story of Vinavil. Inside the glue is concealed what may appear to be quite simple chemistry, yet at the same it can be quite surprising for its complexity because, apart from monomers, there is into it a delicate balance of numerous other chemical substances: initiators, activators, chain transferring agents,

emulsifiers, buffers, stabilisers, crosslinkers, etc.

The technology used in the production of these polymer emulsions is in constant evolution in order to obtain increasingly superior performance characteristics, and at the same time to respect the environment, optimise energy consumption and manufacturing cycles and reduce and eliminate hazardous substances, even trace quantities.

In fact, even though water-based polymer dispersion is not classified as hazardous according to current norms and standards, it is a requirement, nonetheless, that none of the substances used intentionally in the production cycles fall within the category of substances classified as being of very high concern according to the REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) regulation issued by the European Union. If a substance from this category needs to be used, you may only do so if specifically authorised beforehand. Norms and standards are updated continuously in parallel with the development of new scientific discoveries. Over the years, therefore, a challenging and constant research and development work has been carried out to find alternatives to substances classified as SVHC (Substances of Very High Concern) with others, less hazardous ones, without altering the performances and the properties of the product.

THE GREEN EVOLUTION

The aim of the REACH regulation is to ensure that risks deriving from the use of SVHC are tightly controlled and, where possible, to replace these substances. If a substance is identified as hazardous it is added to a “candidate list” and, following an examination process by ECHA (European Chemicals Agency), it may be listed as authorised and/or restricted. According to article 57 of the REACH Regulation, substances listed as SVHC in Annex XIV (that is, substances which may have a negative effect on man and the environment), are those such as CMR (Carcinogenic, Mutagenic or Reprotoxic), PBT (Persistent, Bioaccumulative or Toxic), vPvB (very Persistent or very Bioaccumulative) and all those substances that could have serious, irreversible effects on human beings and the environment, such as endocrine disrupters.

The increasing level of awareness of risks for our health and respect for the environment, along with increasingly stringent limits imposed by norms and standards, have promoted the gradual and complete elimination of hazardous substances from this line of Vinavil products. The strategy followed by the company has been to study and realize the replacements for SVHC, by anticipating the evolution of the standard regulations, without waiting for the so-called ‘sunset date’ (the date beyond which a listed substance may only be used if authorisation has been granted beforehand by ECHA), through a programme of intense research and development work, in collaboration with both the suppliers of the raw materials and the customers (who, in this context, are the industries which employ these polymers to formulate their finished products).

THE ELIMINATION OF SVHC

Going back to the “white glue”, the SVHC that were formerly used in its formulation which have been gradually replaced are:

Phthalates. These are plasticisers widely used in the plastics industry, many of which are highly problematic due to their migration and release into the environment. In the past, diisobutyl phthalate (DIBF) was one of the ingredients of Vinavil white glue, used for its efficiency in the filming process of polymer emulsions (FIG.1). In 2010, REACH Regulation placed it in the list of SVHC and then in Annex XIV, in that, similarly with other

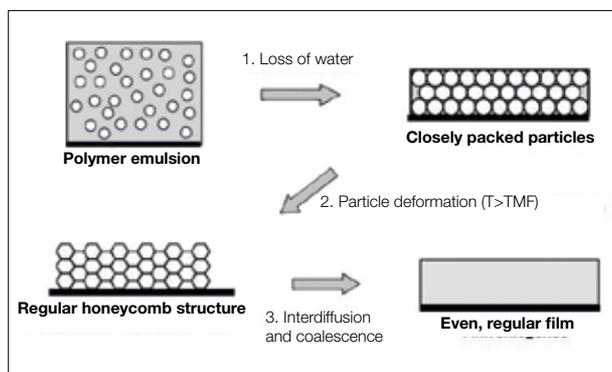


FIG. 1. The filming process of polymer emulsions.



FIG. 2. Reactor for synthesis tests.

phthalates, it is teratogenous, reprotoxic and highly toxic for aquatic organisms. Completely eliminated from Vinavil production processes in 2008, phthalates were replaced mainly with the non-hazardous “food-grade” substance triacetin, obtained from renewable sources (it is made from glycerol, a by-product of the biodiesel production process). Replacing this type of additive in formulations, however, is not a simple ‘drop-in’ process. In-depth studies are required to assess its thermal characteristics (DSC and DMA analysis), mechanical properties (modulus, hardness, load/extension behaviour, etc.), product stability, the way it maintains its chemical and physical properties and its effectiveness in bonding different materials.

Cobalt. In the past cobalt acetate, which is a toxic, CMR and hazardous for the environment substance, was used in combination with oxygenated water as a catalyser in the radical polymerisation process, to catalyze the reaction of the radicals which trigger the process. Replacing the divalent ion with a non-hazardous salt from another transition metal (Mohr’s salt) was not a simple process as it influences both the molecular weight distribution of the polymer chains and their structure, and the products needed to be completely re-formulated.

Boron. Labeled only recently as teratogenous and reprotoxic, until a few years ago boron was used, in the form of borax, as both a buffer in the polymerisation process and as a bonding promoter in some specific applications. This was also replaced by other non-hazardous salts by modifying the formulations.

If we extend this discussion from the white glue to include the other lines of polymer emulsions produced by Vinavil, we may also consider the following substances:

Formaldehyde. This is a toxic, carcinogenic molecule which is still widely used for a wide number of applications in different sectors and for various goods; until a few decades ago, it was added to white glue in very small amounts, as a bactericide. If not intentionally added, however, it may also be generated as a by-product of chemical reactions from other sources, such as some polymerisation initiators, cross-linking agents and biocides. Certain polymerisation and formulation technologies had to be modified in order for it to be reduced/eliminated (FIG.2). Firstly, work was carried out on those areas where it may be



FIG. 3. Assessing the amount of damage to the wood near the joint.

generated during the reaction phase: the molecule of sodium formaldehyde sulfoxylate (a radical polymerisation initiator) has been replaced in numerous products by other types of reducing agents or by different initiator systems, while N-methylol-acrylamide (a bi-functional crosslinking monomer, which is highly effective in the textile binders sector and in water-resistant wood adhesives) has been replaced in some applications by alternative crosslinking systems, and in other applications by radically re-formulating the products, intervening on molecular weights and modifying certain protective colloids. As far as active biocide principles are concerned, formaldehyde donor molecules and molecules that release formaldehyde have been abandoned in favour of other types, such as isothiazolinones and by other formulas/innovative molecules, constantly testing the latest developments available in the biocide technology. And lastly, due to the increasing demand for lines of products characterised as being completely 'formaldehyde free', special attention has been placed on developing and perfecting effective scavenger systems that completely eliminate any residual trace levels.

Alkylphenol ethoxylates (APEO). Non-ionic surfactants widely used in numerous sectors, they are highly effective molecules but are toxic, particularly for aquatic organisms, and are of particular concern because they are bioaccumulative, persistent and endocrine disruptors. In fact alkylphenols, similarly with many phthalates, have a chemical structure partially similar to that of naturally occurring oestrogen hormones and are able to imitate them and affect their processes. They are not used in the Vinavil white glue but are highly functional, for example, in the synthesis of acrylic-based emulsions. The process to completely eliminate them is almost complete, and they have been replaced mainly by other types of non-hazardous surfactants, such as naturally based polyethoxylated fatty alcohols, synthetic oxide-alcohols and other similar substances or innovative mixtures. Various factors need to be assessed during this delicate process of replacement, including HLB (Hydrophilic-Lipophilic Balance), CMC (Critical Micelle Concentration), the stability of the pre-emulsions and the long-term stability of emulsions and final formulates.

Residual monomers and volatile organic compounds in general.

For vinyl-based polymers they are typically acetone, tert-butanol, acetaldehyde and certain light-weight esters. For years the company has been working on their gradual reduction and the old Vinavil odour has been almost completely eliminated. This has been achieved by developing increasingly effective post-polymerisation processes to maximise monomer conversion, while at the same time controlling reaction conditions to ensure the formation of other VOC molecules as by-products is not encouraged. Lastly, final stripping technology has been optimised so that, depending on actual requirements, very low levels of residual VOC content may be achieved, in many Vinavil product lines well below 0.1%.

For many of the examples mentioned above, even though the elimination of SVHC has not necessarily led to a significant variation in costs, the operation has been far from easy, in that an extensive reformulation of the product has been required, because the chemistry behind these polymers is a delicate balance of numerous factors.

The reformulation process may be summarised in the following points:

- > Bibliographical research
- > Preliminary synthesis tests using alternative formulas
- > Analytical characterisation of the prototypes
- > Formulation and specific application tests (FIG. 3)
- > Synthesis optimisation
- > Industrial-scale production tests
- > Validation of the results
- > Industrial tests at clients' sites/facilities
- > Variation and approval of the new formula

FUTURE TRENDS

Vinavil is in the front line with its commitment for a chemical industry that respects nature. The company is part of the international "Responsible Care" initiative which has the objective of promoting chemical companies as providers of opportunities for the global society. The development programmes for the water-based polymer lines are moving forwards in numerous directions:



FIG. 4. Loading the product and, in the background on the left, the tubular reactor used for the high pressure copolymerisation of vinylacetate with ethylene at a Vinavil plant.

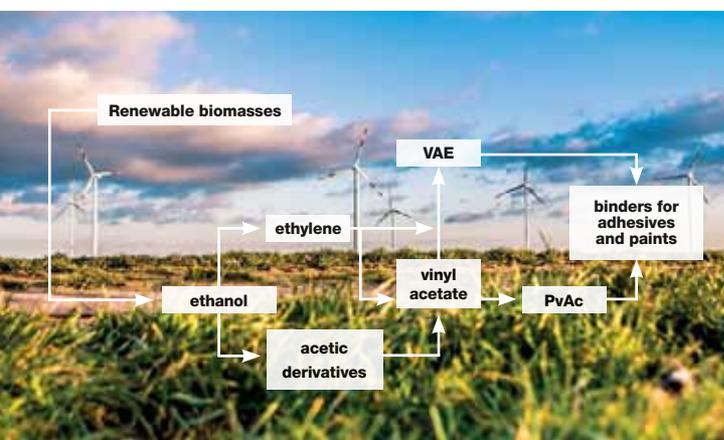


FIG. 5. An example of the production of polymers from renewable sources.



CHARACTERISTIC	METHOD	UNIT	VALUE
Solids content	MV PF 01	%	51-53
Brookfield viscosity	UNI EN ISO 2555	Pa*s	9-16
pH	ISO 976	-	4-5
TMF	UNI 8490-14	°C	0
Setting time on wood	MV AT 025	N/mm ²	>3
D2 bonding strength	EN 204/205	N/mm ²	>8
Setting time on paper	UNI 10114	seconds	10-12

FIG. 6. Technical data of the Vinavil white glue.

- Reduction of content of volatile (VOC) and semi-volatile (SVOC) organic compounds;
- Development and introduction of a new generation of plasticisers from green sources (such as certain types of polysaccharides and lipids obtained from the transformation of fruit and/or agricultural waste);
- Study of innovative polymers with the ability to film at lower temperatures which, as a result, wouldn't require the addition of coalescing substances in their formulation;
- Global reduction of greenhouse gases by optimising the efficiency and yield of production plants, promoting the use of rail transport for raw materials, the deliveries of products in bulk to customers and promoting the use of recyclable packagings (FIG. 4);
- Further reduction of waste from production processes by optimising production cycles and the cleaning of reactors to achieve an almost total recycling of process waters;
- Reduction of the carbon-footprint of products by introducing, where technically and economically possible, raw materials made from renewable sources. Even though the chemistry behind these types of polymers currently depends on petrol, this does not preclude the use, maybe only partial, of innovative monomers obtained from natural sources (extracted from

plants and seaweed, for example) and, above all, of monomers currently in use but obtained through chemical and/or enzymatic transformations of biomass. Numerous studies are currently being carried out around the world to find alternative "green" methods of synthesising monomers. Many of these studies have now gone beyond the laboratory and pilot stage and have reached the industrial scale [2]. Potentially promising examples in this sector are the synthesis of acrylic monomers from acrylic acid obtained from sugar or glycerol, and the synthetic path which, starting from bioethanol obtained from biomass and/or cellulose wastes, can lead to the production of vinylacetate and ethylene (FIG. 5).

On a more general note, a final mention must go to the constant improvement of the performance properties of water-based paints and coatings as a replacement for solvent-based ones. This has been an ongoing trend for a number of years and, for Vinavil, currently involves the development of acrylic binders for the formulation of products used to protect wood (primers, enamels) and metal (anti-corrosion varnishes). In fact, for these types of applications, even though solvent-based products are being increasingly subjected to limits regarding VOC emissions and are destined to be eventually replaced, they are still widely sold and used; the ongoing challenge is to develop water-based products with not only equivalent performance properties, but even better ones.

CONCLUSIONS

The production of chemicals in this industrial sector is based on raw materials of mineral origin, and is likely to be so for a long time in the future. With this in mind, therefore, it is necessary for the concepts of "Green Chemistry" to be translated in terms of sustainability of processes and products.

The Vinavil white glue has evolved over the years to be more sustainable and environmental friendly, in line with the company's policy of responsibility. The modifications made to the product are particularly significant from a green chemistry perspective, and are a clear demonstration of how it is possible to be sustainable from both an economic and production point of view without affecting competitiveness: the performance properties of the Vinavil white glue still represent a reference point in the market (FIG. 6).

The experience of Vinavil confirms that, with sufficient investment into Research and Development, the objectives set by REACH are achievable.

It is finally important that the concepts of sustainability, and their added value, are fully acknowledged and assimilated, both by users and the market.

This article was taken from the online publication "La chimica e l'industria", year 1, no.5, September/October 2017, whom we kindly thank for their collaboration.

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Luigi Mora. R&D Laboratory, Vinavil SpA (Italy)



MAPEI IS SUPPORTING LA TRIENNALE DI MILANO

THE COMPANY IS ENHANCING AND STRENGTHENING ITS TIES WITH ONE OF THE MOST PRESTIGIOUS MILANESE INSTITUTIONS IN THE WORLD OF ART AND CULTURE



LA TRIENNALE DI MILANO



A relationship that has grown closer down the years and been extremely successful and satisfying for both sides is now being strengthened in the name of culture, art and business.

After years of joint undertakings, Mapei has become one of the official supporters of La Triennale di Milano Foundation, a Milanese cultural institution focused on organising exhibitions, conferences and events in the world of art, design, architecture, photography and fashion. It has done so by joining the Amici della Triennale (Friends of the Triennale) project as a Corporate Platinum Sponsor.

“Sponsoring La Triennale is an impor-

tant stepping stone for Mapei, both in terms of its commitment to the world of culture and its close ties with the Milan region, where Mapei was originally founded and still has its headquarters,” so Adriana Spazzoli stated, Mapei Group’s Director of Operational Marketing and Communication.

Becoming Friends of La Triennale means joining a group of companies that share the same values of social responsibility and cultural patronage and getting actively involved in the Foundation’s activities.

Supporting La Triennale means sharing the same values in terms of design culture and innovation in a setting that is

both international and highly emblematic of Italy and Milan.

Mapei's support will help in the organisation of cultural projects and maintenance-renovation work on Palazzo dell'Arte, where La Triennale is located. The decision to support this Milanese cultural institution is based on the firm belief that "work can never be separated from art and passion" as Giorgio Squinzi, Mapei's CEO, claimed. Mapei's business enterprises are not only aimed at meeting the building industry's requirements, including the conservation of places that are part of the artistic-cultural heritage, but also at supporting cultural projects and work related to social responsibility.

The partnership between Mapei and La Triennale di Milano Foundation also derives from the fact that both parties deal with the same people: professionals from the world of design to whom Mapei supplies its own technology and cutting-edge tools and solutions.

In 2016 this synergy saw Mapei sponsoring an exhibition entitled "Design behind Design" promoted by the Milan Diocesan Museum as part of the 21st Triennale International Exhibition.

As part of the various activities organised last year in partnership with La Triennale, Mapei sponsored an exhibition entitled "Il Bel Paese - Un progetto per 22.621 centri storici" (The Beautiful Country - A project for 22,621 old town and city centres in Italy), which looked

at Italy from various different viewpoints with the aid of original drawings by the Italian architect, city planner and architecture historian Leonardo Benevolo, as well as video clips, graphic designs and photographs.

Leonardo Benevolo developed a historically founded methodology for the study and modification of ancient and modern settlements.

The preservation of the historic environment has elicited heated discussion in Italy among theorists, technicians and advocates for a civil society. From this debate an original project emerged, which recognized cultural, territorial and social balance as a prerequisite for conservation. The planning experiments initiated in Italian cities became a working model that circulated in Europe and the world from the 1960s to the 1980s as international institutions adopted these urban planning strategies.

The design of the historic city is one of the most significant and original Italian intellectual contributions to international research in the field of architecture and the 20th century city.

Mapei, which is increasingly at the centre of the building, design and "good living" sectors, wants to be actively engaged in cultural and artistic enterprises such as those organised and displayed by such an important international-scale institution as the La Triennale di Milano.

LA TRIENNALE DI MILANO FOUNDATION

La Triennale di Milano is an international cultural institution that has been around for over 90 years, which organises exhibitions, conferences and events connected with art, design, architecture, fashion, film, communication and society. It organises exhibitions on contemporary art, nationally/internationally famous architects and designers, the great fashion designers who have changed our customs and taste, and miscellaneous social issues. It is a testing ground for ideas aimed not only at people interested in these matters, students and professionals, but also the public of the future (children and young people) thanks to its experimental and interactive activities focused on the culture of design.

La Triennale is located in the Palazzo dell'Arte in downtown Milan inside Sempione Park, which hosts over 40 exhibitions every year, approximately 300 events and over 600 conferences, concerts, meetings and other shows. Triennale also means the Triennale Design Museum, which investigates, studies and represents Italian design from constantly changing viewpoints. La Triennale also hosts the Teatro dell'Arte, one of the most important of its kind in Milan, which is now a new benchmark for cultural projects and the performing arts in the city.

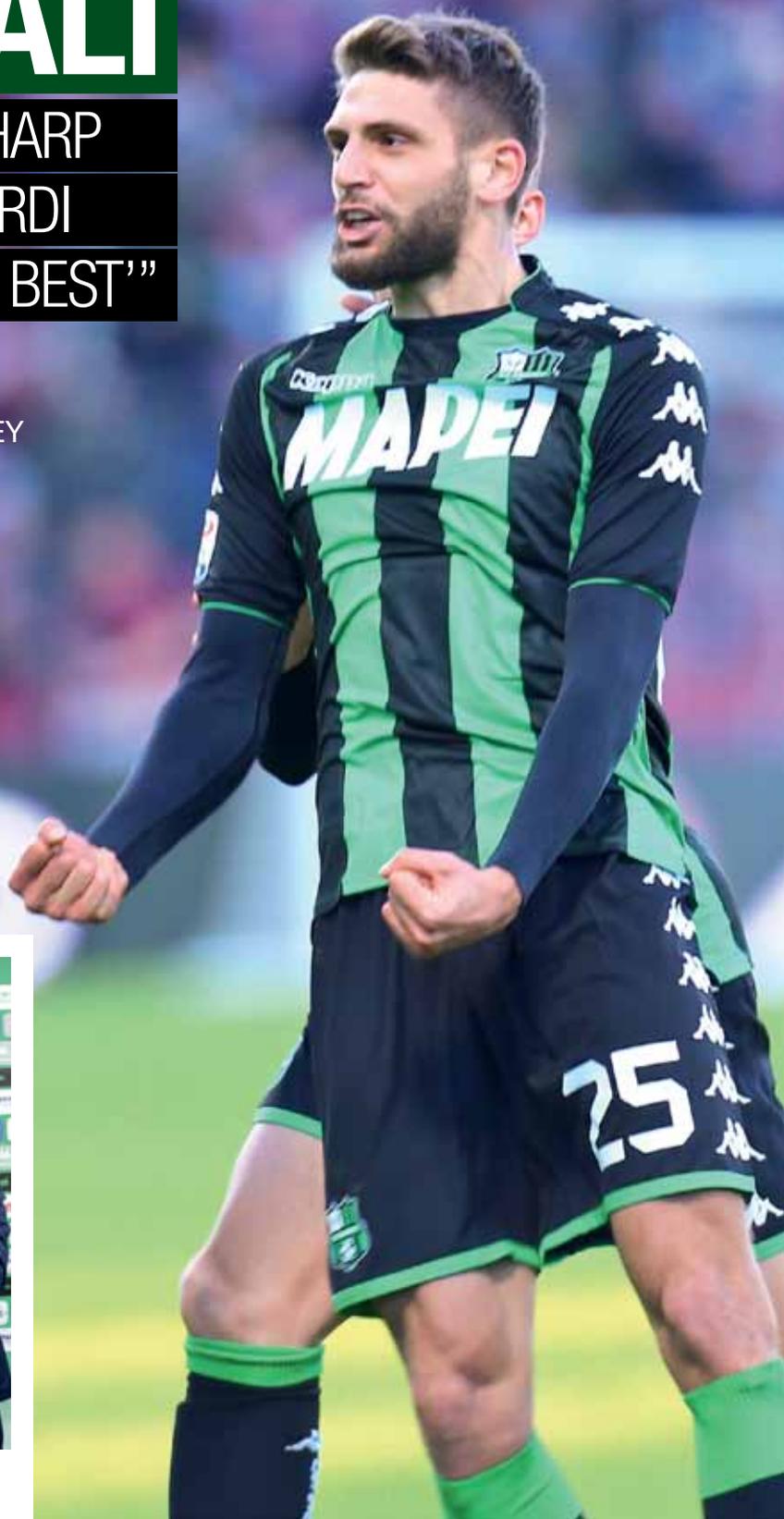
The exhibition entitled "The Beautiful Country" featured original drawings by Leonardo Benevolo.



CARNEVALI

“THE TEAM LOOKS SHARP UNDER IACHINI. BERARDI WILL BE BACK TO HIS BEST”

THE FORWARD BABACAR AND CENTRAL DEFENDER LEMOS HAVE ARRIVED AT THE CLUB FOR THE KEY END-OF-SEASON MATCHES



ABOVE. Giovanni Carnevali, Sassuolo's CEO and General Manager, and the Senegalese striker Khouma El Hadji Babacar
RIGHT. Berardi celebrates after scoring against Torino.

During the first few months of the season, when Sassuolo was managed by Cristian Bucchi, the team struggled to get out of the bottom three of the table. Since Beppe Iachini has been in charge, the team sponsored by the Mapei Group has been sailing in more peaceful waters. So, is all this just down to Iachini? "Back in the summer, we knew that who took over after Eusebio Di Francesco had been on the bench for a few seasons would inevitably struggle - so Giovanni Carnevali, Sassuolo's CEO and General Manager, noted - so it was not easy for Bucchi to take over. Cristian did a good job". But it was not enough in the end.

"Compared to Bucchi - Carnevali added - Iachini has been able to draw on all the vast experience he has gained in the Italian Serie A, both as a footballer and then a team manager. Iachini's charisma is also significant, as well as the energy he has managed to pass on to the entire team".

Does that mean the players realised they had to take on more responsibility?

"Definitely. After changing team manager, the players realised they would be held accountable if things continued to go badly. The Sassuolo squad is much the same as last season, when the team did not really struggle to keep up a good position in the league table. Dropping down the table was not an option".

During a magical December Sassuolo even beat Inter Milan. The game against Inter is always a crunch match for a team sponsored by Mapei. What was the key to the team's win?

"Beating a prestigious team at the top of the table like Inter Milan is always a fabulous feeling. What was the secret to our success? Determination, teamwork and a classy player like Falcinelli, who scored the winning goal. He proved once again that he is one of the best strikers in Italy. As regards our winning streak, I think my team played really well against Crotona, Sampdoria and in the draw against Roma. It is hard to decide which was our best performance: they were all great".

Many people think the defeat at Ferraris Stadium against Genoa



The central defender Mauricio Lemos has recently joined Sassuolo's squad.

was a bad result.

"Considering how we played, we should have at least got a draw. One mistake cost us the game".

In December Sassuolo performed like a top-of-the-table team, but Berardi, often described as the best player of the team, constantly underperformed according to the player ratings. Why was that?

"Domenico got injured in 2017 and that affected his training. Recently he has improved and the goal he scored against Torino confirmed that. He has started to make the difference and we, the staff, are confident he will really perform well at the end of this season's championship".

The team drew at the Mapei Stadium in the home game against Torino. Was Torino just too good or was Sassuolo still a bit rusty after the post-Christmas break?

"After a break when all the players enjoy a few days holiday, it is only to be expected that there will be a few hiccups. That is not the reason why we drew at home".

Sassuolo has only got one point from three games in January, even losing at home against Atalanta. Has there been a dip in fitness?

"I do not think fitness is the problem. Losing against Atalanta is not a terrible result, considering the quality of its players and the fine football the team plays. Atalanta is a great team.

In the defeat against Genoa, draw against Torino and match against Atalanta, we only scored one goal in total through Berardi, but we did create plenty of chances and hit the woodwork several times. At the beginning of 2018

we have created a lot but missed plenty of goal-scoring opportunities".

NEW ARRIVALS DURING THE WINTER TRANSFER WINDOW

Sassuolo has signed the Senegalese striker Khouma El Hadji Babacar (born 1993) during the January transfer window. This big, powerful centre forward is 1.91 m tall and weighs 85 kg and was signed from Fiorentina. Babacar scored four goals playing for Fiorentina during the first part of the 2017-2018 season: a good strike rate considering that he only played 504 minutes. Without being a regular player in the starting line-up last season, he still scored 10 goals. Carnevali has signed him on loan, but the club is under contract to buy him at the end of June.

The Uruguay flag has been fluttering at Sassuolo since January: the central defender Mauricio Lemos (born 1995) has joined Iachini's squad. Another big, strong player, who is 1.87 m tall and weighs 85 kg, the Uruguayan Lemos has arrived on loan from Las Palmas (Spain). He has played 49 matches and scored five goals in the Liga, Spain's top-flight league, a championship of the very highest calibre.

As regards players who have left the club on loan during the winter transfer window, as well as Diego Falcinelli, who has moved to Fiorentina (which has the option but not the obligation to sign him permanently), Sassuolo has also loaned out another striker, Gianluca Scamacca, to Cremonese.

Another player to leave Sassuolo on loan for Cremonese is Giovanni Brissa, who had been on loan to Cesena.

The Spanish right-back Pol Lirola (born 1997) was signed by Sassuolo on a permanent basis in January and is now owned by the club. Lirola had been on loan from Juventus since July 2016. Marcello Gazzola has gone to Parma, while Paolo Cannavaro has retired from professional football. Paolo is now in China working on the technical staff of Guangzhou under the team manager Fabio Cannavaro, his brother.

Other new signings for Sassuolo are Andrea Cisco, bought from Padova but left at the red-and-whites on loan, and Alessandro Tripaldelli who has arrived from Juventus (and will stay at the club on loan).



MONTECCHIA GOLF CLUB

THE “IAGTO SUSTAINABILITY AWARDS 2018” PRIZE GOES TO THE GOLF CLUB WHERE MAPESOIL SYSTEM WAS USED

Montecchia Golf Club, just a few kilometres from the city of Padua, was founded in 1988 and is a prestigious example of Italian excellence on the international golfing scene. The club is on the site of the property once owned by the Count Emo Capodilista family and includes an ancient castle, a splen-

did Renaissance villa and an old farm renowned for the quality of its great wines. The club house is an old building which was once used for drying tobacco, lovingly restored to its former splendour. The course has a total of 27 holes, designed by the British architect Tom Mc-



INTERVIEWING ALESSANDRO DE LUCA, RESPONSIBLE FOR GRASS SURFACES FOR THE ITALIAN GOLF FEDERATION

Can you explain to our readers what your role is in the FIG, the Italian Golf Federation?

The Italian Golf Federation has its own Federal Technical Centre which, amongst its various activities, also holds training courses for Superintendents, that is, technicians in charge of the construction and maintenance of golf courses. Training is carried out by the Grass Surfaces Section which I have been working with since 1991 and, since 2004, acting as Coordinator. The idea behind starting these courses was based on the assumption that, if a golf course is constructed well and is then maintained correctly, it is possible to optimise its running costs quite significantly, it can have a beneficial impact on the environment and, above

all, improve the quality of play. The Section's activities, however, are not limited to just training: along with my colleagues (two agronomists and a Natural Sciences graduate), we provide assistance to golf courses, take part in research work in collaboration with various universities and carry out a host of activities aimed at promoting the environmental aspects of golf courses.

When you visit golf clubs in Italy and around the world, what are the most common problems you encounter with the courses?

The most important aspect of golf course management is obviously the grass maintenance, particularly that of the greens. A complex setting such as a golf course, however, includes



Cauley (former President of the British Association of Golf Course Architects), and blends in perfectly with the area's typical flat landscape punctuated by the undulating hills of the nearby Colli Euganei Regional Park. The design choices adopted in its construction have led to the creation of a technically challenging course, while at the same paying particular attention to a course management philosophy based on the natural surroundings and environmental sustainability, typical of the British approach to golf.

In fact, a golf club that implements a management policy based on environmental sustainability has numerous different functions: it represents an oasis that helps develop and safeguard the biodiversity and functionality of the surrounding ecosystem, it both buffers and stores drainage water, it helps conserve



Chiara Cappon, Montecchia Golf Club's Marketing Director, and Paolo Casati, the Club's President, receiving the award.

the local landscape, it provides vital green recreational areas within an urban context and it helps preserve natural and economic resources.

From when it was very first founded, Montecchia Golf Club has set an example for its concrete commitment to the preservation and development of natu-

ral resources, as testified by the various environmental awards received over the years: following its two "Impegnati nel verde (Green Commitment)" awards (in 2007 and 2012), in 2013 Montecchia Golf Club was granted the prestigious environmental certification GEO On-Course™, reconfirmed in 2018.

GEO certification represents an important achievement for any golf club and is considered to be a kind of environmental summary of a club. It is awarded by the non-profit body Golf Environment Organization (GEO) which, in collaboration with various government bodies, environmental groups and the academic world, promotes and develops the concept of environmental sustainability of golf courses. Each club in the list of candidates for this severe environmental certification must demonstrate that it complies with a series

many other aspects, such as water systems management, the equipment and machinery available, trees and woodland, the roads and paths network and, as far as the actual game is concerned, the bunkers, obstacles formed by depressions filled with sand dotted around the course. And while we are on the subject of bunkers, it is extremely important that their edges are well defined, their drainage system works perfectly and the sand is always well-raked and clean, which means no growth or foreign bodies such as stones, silt or other unwanted materials. In fact, it is no coincidence that the correct maintenance of these particular surfaces is one of the most challenging aspects.

After one year since the intervention using Mapei technology, what sort of feedback have you received from your Superintendent?

It is precisely in consideration of the amount of work required to maintain bunkers correctly that research is pushing heavily towards the development of systems that enable bunker management to be rationalised. This is why this particular issue was included in the "Biogolf Case Study", a ground-breaking project for this sector launched in January 2015 at Montecchia Golf Club, which involves an approach to golf course management that takes into account the requirements of bio-agriculture. Apart from the invaluable support

we have received from Montecchia Golf Club, the research project is being conducted in collaboration with the Grass Surfaces Section of the FIG, the Istituto per il Credito Sportivo (Institute for Sports Credit), the main Italian environmental organisations and the Universities of Bologna, Padua, Pisa and Turin. And in 2016, in collaboration with Mapei and the construction company Battistella Golf, the bunker problem was tackled by testing three different construction techniques with the aim of maintaining the quality of the sand and the efficiency of the drainage system over a period of time. We have been constantly monitoring their condition for over one year, and one of these systems seems to very promising.



PHOTO 1. A fine example of typical problems due to inefficient drainage in bunkers.

PHOTO 2. Spreading MAPESOIL 50 stabilizing agent.

PHOTO 3. Distributing and homogenizing MAPESOIL 50.

PHOTO 4. A compacted flow-layer made with native soil available on site mixed with MAPESOIL 50.

of requirements, all of which are then checked by a group of nominated inspectors, that is, that they really do adopt a system of sustainable management which encompasses the surrounding landscape and ecosystems, energy and resources, water, materials and the supply chain, environmental quality and the local community. The virtuous management policy

adopted by the Montecchia Golf Club resulted in yet another prestigious award in 2017, with the Club receiving the "IAGTO SUSTAINABILITY AWARDS 2018" prize during a ceremony held in Cannes in December 2017.

This award is from IAGTO (the International Association of Golf Tour Operators) as recognition of the excellence of golf clubs from all around the world for their commitment to environmental and social responsibility.

Amongst the most significant initiatives implemented by Montecchia Golf Club, and which have played a major role in obtaining this important result, is undoubtedly the "BIOGOLF" project, the first and, until now, the only one in Italy to have adopted a biological approach to golf course management. The project

was implemented on the 9-hole "Yellow Course" and involves an approach to maintenance based on respect for biological agriculture protocols. Numerous Italian golf courses are profiting from the experience gained by Montecchia Golf Club, such as the conservation of the Bermuda grass tees and fairways, a solution that has enabled water and fertiliser consumption to be drastically reduced and the use of pesticides to be completely eliminated.

Many other tests are also currently being carried out in the same spirit and are making progress thanks also to the collaboration of the Grass Surfaces section of the Italian Golf Federation, the Universities of Padua, Bologna, Pisa and Turin, GEO, and the main Italian environmental organisations (Legambiente, Federparchi and Fondazione Univerde).

One of the most interesting of these initiatives is the maintenance of bunkers, that is, the pockets of sand dotted around golf courses that form obstacles during normal play. Since these areas do not have a grassy top surface, it is impossible to keep infestations in check with pesticides and keep the sand clean, which has quite an effect on the game itself and makes maintenance work particularly expensive.

MAPESOIL TECHNOLOGY

For this particular problem, under the supervision of the Superintendent, the Mapei Research & Development laboratory has developed a system to improve drainage based on MAPESOIL GF technology. This system has been specifically developed to increase the speed at which water flows away from





5



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PHOTO 5. A flow-layer made up by applying the MAPEPLAN PE sheet.

PHOTO 6. Downloading MAPESOIL GF draining mix onto the bunker area.

PHOTO 7. Laying the drainage mix made up of VG SPORT GU 6 and MAPESOIL GF.

PHOTO 8. A detailed view of the drainage mix prepared with MAPESOIL GF.

IN THE SPOTLIGHT

MAPESOIL GF

It is a high-performance powdered hydraulic binder used to build drainage layers on golf courses. It can be used to build drainage systems in and around bunkers, as well as drainage systems for natural, hybrid and artificial grass playing surfaces and drainage and water storage systems to qualify for GEO OnCourse™ certification of golf courses. MAPESOIL GF is a powdered, cementitious-based binder with special additives used in place of normal cement to batch conglomerates with high mechanical properties while maintaining a high level of permeability for playing surfaces. The high infiltration rate of sub-based made from MAPESOIL GF allows water to drain off quickly from surfaces, such as the sand in bunkers. Unlike traditional drainage systems, drainage sub-bases made from MAPESOIL GF allow all the water that reaches for surfaces, such as bunkers, to be recovered evenly and continuously.



surfaces and, at the same time, maintain the characteristics of the layer of sand, thereby reducing maintenance costs for the club.

The system involves the installation of a highly permeable blanket of MAPESOIL GF over the entire surface of the bunker, made from a mixture of gravel and a high-performance cementitious binder, which leads to a high level of volumetric stability, good mechanical properties and durability. This mixture is usually applied over a “flow-layer” made either from waterproofing sheets or by stabilising the soil with MAPESOIL 50, if unstable.

The high porosity of the MAPESOIL GF mix allows water to run off more quickly following a vertical direction if there is a sudden rainfall, thereby reducing the risk of the sand being leached and reducing maintenance costs to restore the bunker to its original condition. Also, the presence of a flow-layer below the permeable MAPESOIL GF surface drives all the water (both rainwater and irrigation water) towards the central collection point, so that the club can eventually recycle the water and use it for irrigation purposes.

Upgrading of the bunker area is completed by spreading on a top layer in variable thicknesses of clean, calibrated VG SPORT SU 2 silica sand by Vaga

Srl, which is compliant with the requirements of the USGA (United States Golf Association) adopted all around the world.

Vaga Srl, a subsidiary of the Mapei Group, in compliance with the specific requirements of all those operating in the landscaping sector, also offers a complete range of graded, calibrated aggregates, VAGA SPORT, certified for the construction and maintenance of grass playing surfaces, the key element in the game of golf.

Once again, choosing quality construction materials and cutting-edge, sustainable solutions, such as those offered by Mapei and Vaga, has been rewarded.

Elisa Portigliatti. Mapei Corporate Product Manager, Sport Line

TECHNICAL DATA

Golf Club della Montecchia, Montecchia (Italy)

Period of construction: 1988-1990

Year of the intervention: 2016

Intervention by Mapei: supplying products for the drainage system of the bunker

Superintendent: Brian Og O’Flaherty

Main contractor: Battistella Golf Srl

Mapei coordinators: Marco Cattuzzo and Elisa Portigliatti, Mapei SpA (Italy)

MAPEI PRODUCTS

Completing a drainage system in the bunker: Mapeoil GF, Mapeoil 50, Mapeplan PE*, VG SPORT GU 6**

*This product is manufactured by Polyglass, a subsidiary of the Mapei Group.

**This product is manufactured by VAGA, a subsidiary of the Mapei Group.

For further information see www.mapei.com



WE4YOUTH

THE SODALITAS FOUNDATION'S CAMPAIGN TO PROMOTE INTERACTION AND PARTNERSHIPS BETWEEN EDUCATION AND BUSINESS

We4Youth, a campaign organised by the Sodalitas Foundation as part of the "European Pact4Youth" in partnership with JPMorgan Chase, was presented on 22nd January and sets out to look at the issue of job experience for school children and, more generally speaking, partnerships between education and business from the viewpoint of those involved, discussing personal experience and providing information about and sharing tools, best practices and business models, as well as successful partnerships between schools and businesses.

"The issue of work experience and partnerships between schools and businesses has been discussed at length over the last few months in Italy and according to 85% of Italian schoolchildren (source: AlmaDiploma) it has been a positive experience for them. The We4Youth campaign focuses on those (often innovative) skills that companies are looking for, which schools are not able to provide. For us, being part of this Pact means making an important contribution to help compensate for this shortcoming. Experiments underway show that when schools and businesses work together, a highly positive dynamic is created, motivating those involved to overcome the usual problems associated with setting up some sort of dialogue between school executives, teachers, pupils, families and businesses", so Adriana Spazzoli noted, the president of the Sodalitas Foundation and Mapei Group's Operational Marketing and Communication Director.

The website www.we4youth.it contains the National Action Plan for Italy and, more generally speaking, projects aimed at promoting partnerships between schools and businesses, including results obtained so far.

The website will provide updates about the results achieved, as well as information to help schools, businesses, young people and organisations set up partnerships between schools and businesses.

The We4Youth campaign will also operate on the main social networks - Facebook, LinkedIn, Twitter and Instagram - and plans to organise a national event and series of local roadshows to promote employment and inclusion for young people.

> THE EUROPEAN PACT FOR YOUTH

"The European Pact for Youth" was launched on 17th November 2015 during the Enterprise 2020 Summit organised in Brussels (Belgium) by CSR Europe, the European business network for corporate social responsibility. This Pact aims to appeal to all the businesses, social players, education system, young people's organisations, services for public and private employment, and all the other key players, so that partnerships between business and education can be developed or reinforced to boost youth employment and inclusion.

Under the high patronage of Martin Schulz, President of the European Parliament, Donald Tusk, President of the European Council and Jean-Claude Juncker, President of the European Commission, the Pact was also signed by Marianne Thyssen, European Commissioner for Employment, Social Affairs, Skills and Labour Mobility, with the backing of Tibor Navracsics, European Commissioner for Education, Culture, Youth and Sport, Elisabeta Bieskowska, European Commissioner for Internal Market, Industry, Entrepreneurship and SMEs, and Günther Oettinger, at the time EU Commissioner for Digital Economy and Society. It is worth noting that Adriana Spazzoli was one of the first business leaders to sign "The European Pact for Youth".



MAPEI with **ARCHE** a non-profit organisation for children and mothers

CLOSE TO THOSE MOST NEEDY, PROMOTING POSITIVE INVOLVEMENT IN THE SOCIETY

Mapei has been supporting Arché for many years, an Onlus (socially useful non-profit organisation) set up in Milan in 1991 thanks to the work of Father Giuseppe Bettoni to deal with paediatric HIV emergencies. Nowadays Arché intervenes in various kinds of critical situations in which children are suffering: Arché's mission is to take care of both mother and child in troublesome social situations or assist people that cannot cope. The aim is to help them become socially independent in terms of both accommodation and work.

The close bonds between this foundation and Mapei have grown stronger year by year, with various charity events being organised to help the foundation. Recently Mapei provided a helping hand in a project to renovate the CasArché care home that opened in Quarto Oggiaro, a neighbourhood in the suburbs of Milan, at the end of 2016, which now accommodates vulnerable mothers and children in need. Colour was the main feature of this renovation project with Mapei supplying products from its COLOR PAVING range for architectural exposed aggregates concrete floors, guarantee-

ing sustainability, versatility and a wide spectrum of colours.

Help is provided at CasArché by focusing on:

- * accommodating mother and child in shelters;
- * finding semi-autonomous apartments or housing;
- * providing a job and professional training;
- * providing hospital and home care as a form of psychic-social-educational support;
- * education in socially acceptable behaviour based on seminars, school projects and workshops.

Arché is involved in projects in Milan, Rome, San Benedetto del Tronto (Italy), Kisii (Kenya) and Chikuni (Zambia) with the help of volunteers and assistants, focusing on families in need and developing a closely-knit community.

Arché deals with emergencies affecting mothers and children: situations people often prefer not to talk about that go on secretly behind closed doors, such as social-financial poverty, serious illnesses or physical-verbal abuse.

Arché takes care of these people and

helps them find a job and somewhere to live.

Arché's aim is to promote and encourage family and individual voluntary work seen as both a resource and form of positive active involvement in society, a way of showing solidarity and taking social responsibility.

Talk of voluntary work seems to be a rather abstract notion about helping and supporting people in need. But there is much more to it than that. Voluntary work is a kind of moral and physical support, a relationship between strangers of a very intimate nature. Aid and encouragement to keep on living and not giving up the fight, a way of helping people to redefine themselves and rediscover their own identity that has been lost due to poverty, misery, war or solitude.

This is what makes Arché such a special kind of socially useful non-profit organisation, and it also what makes the bonds between Mapei and the organisation first set up by Father Bettoni so special, too. Mapei believes that growth does not just mean financial success, but also being socially responsible towards the communities you belong to.

A serious commitment for a company which has always been close to people most in need and which, alongside values based mainly around business, also focuses on those "ethical, scientific, humane and cultural duties and obligations that give a business its real character and reputation", as Adriana Spazzoli, the Mapei Group's Operational Marketing and Communication Director, has frequently pointed out.



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