# Realtà MAPEI

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**This issue of the magazine encloses the 2014/2015 match calender for the Italian football Serie A TIM league championship. Follow and enjoy all the matches!**


**COVER STORY.** The Porta Nuova urban development project, which has been completely transforming the Milan skyline, is almost completed. Mapei contributed to its completion by supplying several products for building, admixtures for concrete, solutions for waterproofing and laying ceramics and stone materials, etc.


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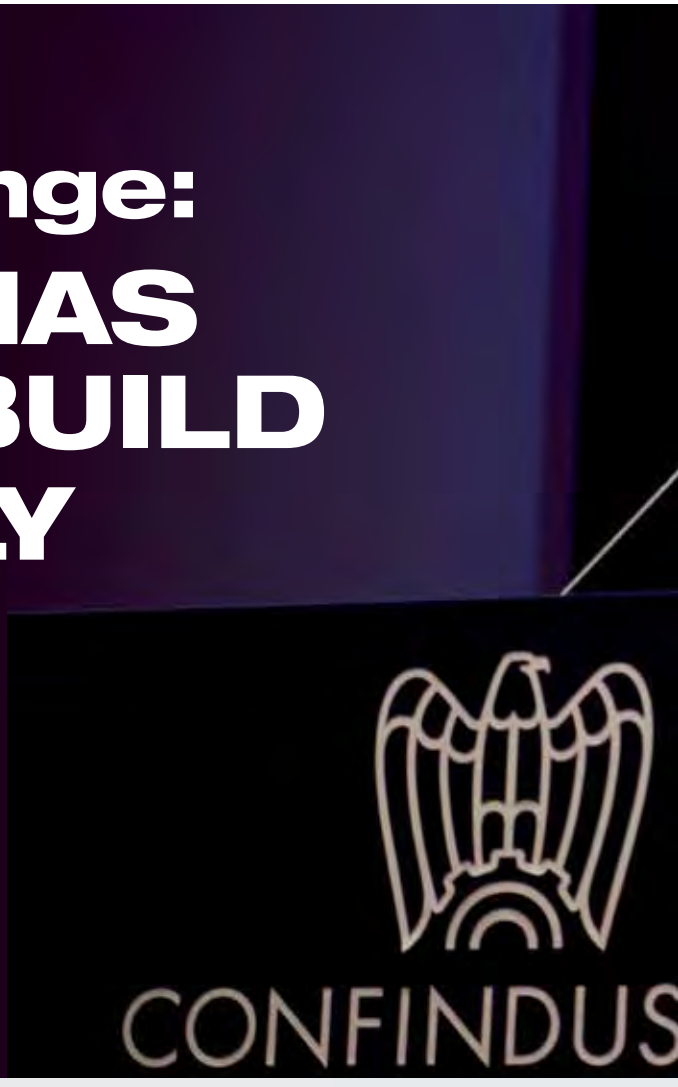
# Work for change: THE TIME HAS COME TO BUILD A NEW ITALY

Annual Confindustria Assembly, Rome, 29th May 2014




The traditional Annual Confindustria (Confederation of Italian Manufacturing and Service Companies) Assembly was held on 29th May at Auditorium Parco della Musica in Rome and was preceded by Confindustria Private Assembly held on 28th May. The public assembly held in a hall bursting with over 3000 people saw more women involved than ever before. On stage alongside the President of Confindustria, Giorgio Squinzi, there was the Italian Minister of Economic Development, Federica Guidi and alongside her, Confindustria's Vice Presidents, Diana Bracco, Antonella Mansi and Lisa Ferrarini and the Director General, Marcella Panucci, as well as the President of the Internationalisation Committee, Licia Mattioli. In the front row, the Italian Minister of Defence, Roberta Pinotti, the President of the Italian energy group Eni and former President of Confindustria, Emma Marcegaglia, the Vice President of the Italian Senate, Valeria Fedeli, and the Italian Senator for the Scelta Civica party, Linda Lanzillotta. Other leading figures in the front rows were Luisa Todini, the President of the Italian Postal Service, and Patrizia Grieco, the President of the Italian electric utility company Enel. Other well-known people in attendance included the Governor of Bankitalia, Ignazio Visco, the President of Consob (the Italian Commission for companies and the stock exchange), Giuseppe Vegas and several leading Italian politicians. On stage there was also the leader of the CGIL (the Italian General Confederation of Labour), Susanna Camusso, alongside the General Secretaries of the CISL and UIL labor unions. In addition to lots of politicians belonging to every party forming the Government, other people listening to Mr Squinzi's speech included the Italian Ministers Poletti, Lupi, Orlando and Franceschini.

**Creative by trade**

As the Italian economist, Alberto Quadrio Curzio, pointed out: "President Giorgio Squinzi's speech to the Confindustria Assembly opens up prospects for greater confidence in Italy as regards what it must and can do both at home and in Europe. However, at the same time, it points out that the recession is not over and that Italian institutions and businesses must realise that not growing means declining". The speech touched on all socio-economic issues affecting Italy and, just a few days after the results of the European Union's elections, the President of Confindustria inevitably had to mention the results of the vote, noting that "Europe can finally embrace reforms or yield to those forces that would like to see the system fall apart….. Confindustria is in favour of reforms in Europe and, even more so, in Italy: for us this is a simple choice, because we are creative by trade".


As regards growing Euro-scepticism, Squinzi did not hesitate to point out that "there is a reason for all this malaise: austerity policies have not helped revive the economy or create jobs. There is, in fact, some growth but not in Europe. Global industrial production and world trading are up and running again, although they are less sturdy than before the recession. The facts and figures since 2008 are very clear: the GNP in the USA is +6.3% compared to -2.5% in the Eurozone, with increasing disparity between wealthy nations such as Germany at +3.8% and the poorest nations like Greece at -23.6%. Worldwide manufacturing output has grown by 36% from 2000-2013, yet production in Italy has fallen by 25%. Europe is struggling and in order to start growing again it must begin a fresh macroeconomic cycle of expansion, abandoning austerity for its own sake that has and will only ever favour the strongest".

As regards Europe's single currency and the creation of a politically united Europe, the President of the Italian industrialists made himself quite clear: "The Euro was a political project as well as a monetary enterprise. When it was first introduced the Euro was intended to lead to a gradual integration and cohesion between the various economies of the nations belonging to the Union. The ambitious goal of political union based around one single currency has not been attained. The Euro has been quashed by the speed of the modern-day world and lost its value due to a lack of political leadership. Having created the Euro, it is, alas, as if we had forgotten to create Europeans".

Squinzi's hopes are quite clear: "Italy's semester in charge of the European Commission must be an opportunity to tone down the excesses of austerity applied asymmetrically and to begin the process of making the citizens of Europe feel much closer to their institutions. Italy is the best equipped nation to achieve this, and it now has a powerful mandate. After over 50 years Europe must be re-launched in the spirit of the original Treaty of Rome. It is no coincidence that Italians have clearly voted in favour of Europe. In Italy the enemy is not Europe, it never has been".

**The forecast for growth**

As regards the prickly issues of growth and creating jobs, the outlook of the President of Confindustria is not so rosy: "I'm afraid that once again this year Italy will not achieve the growth we would like to see and the lack of growth will be accompanied by a lack of jobs. This is the most painful aspect of all for me as a businessman and Italian citizen. Work creates the conditions for attaining individual and collective happiness in any society. The selfish side of society inevitably shows its face when there

is no work; divisions take precedence over unity, holding onto privileges becomes more important than merit". Nevertheless, Squinzi claimed: "We refuse to resign ourselves to being a tired and disillusioned nation, the victim of age-old failings, abstruse and hostile to business, merit and risk-taking".
"This is not the Italy we see every day at the workplace - so the President went on to say - we see a country that is more about manufacturing plants than statistics, which is not concerned about +0.1 or -0.1%, which protects jobs and creates them, which is part of Europe and proudly operates on global markets".
According to Squinzi, the way out of the Italian recession is "to gradually scale down current expenditure, make cuts to unproductive incentives, reduce public spending and radically rethink Public Administration to make it more efficient, reducing taxation to acceptable levels; we need a less cumbersome government that works with businesses to overcome a certain lack of confidence and resignation".

**The production world is evolving**

"Over the last few years a lot has happened in the world of production - so Squinzi went on to say - and industrialisation is changing all over the world. Production is continuing to be moved around, attracted not just by lower costs but also greater know-how…. Industry is at the focus of politics everywhere. Everywhere except Italy. At least not the way we would like to be. In the meantime - so Squinzi pointed out - some real action has actually been taken, starting with an initial reduction in the tax wedge. The repayments of debts owed by the Italian Public Administration has finally begun".
The running of Italian businesses and their prospects have changed over the last few years and the President claimed: "We have learnt a lot during and from the recession: opening up to the world we have introduced new business approaches and models into our companies, which have served us well. We now compete on global markets, drawing on our creativity as a nation... We are well aware of all the complications and ridiculous impediments that weigh us down like lead in our boots and my first, sad thoughts go to all those businesses that have failed for this reason. Those people who worked, and still work, all alone on the home market have suffered enormously. In certain sectors, like the household electrical goods industry, car manufacturing and building, the collapse has been devastatingly costly."
Squinzi's analysis has cast light on certain positive aspects: "New branches have silently grown, others have become stronger and achieved important results on world markets; the whole of Made-in-Italy sector, the food industry, pharmaceuticals and, generally speaking, all those companies that have focused production on foreign markets have obtained good results. Those who have invested in innovation, know-how and greater business expertise have managed to overcome the recession and, in certain cases, have actually gained a more competitive standing. The very fabric of Italian business is being profoundly reshaped, abandoning old types of production and business models and there is plenty of activity among the new businesses run by young people from all over Italy, which suggests Italian capitalism is being radically renewed".

**Simple rules and proper justice**

Among the things that Italian businesses are demanding most urgently are simple, clear and stable rules and regulations, a public administration that works for them and not against them, a quick and efficient system of justice, an education system that can equip young people to take on new challenges, and

**ABOVE.** Picture of Santa Cecilia Chamber in the Auditorium Parco della Musica in Rome, where the Confindustria Annual Assembly was held on 29th May.

carefully targeted research; in addition, Italians need to overcome a certain prejudice that sees business people as enemies of the law or people who try to get round it. The fact is, so Squinzi stated, that: "Nowhere in the world can afford to have its strategic industrial assets managed by the magistracy in opposition with the legislature. Nowhere in the world does it take seven years to authorise the opening of a shop, fifteen for a supermarket, eleven years to decide whether or not to authorise a regasification, 170 days on average to cash a bill from the Public Administration".

**Creating new jobs and the opportunity offered by Expo 2015**

Squinzi also addressed the Italian labor unions: "let's not confine ourselves to what we are familiar with, but rather broaden our domestic horizons. We must operate worldwide and measure up against the latest rules of competition. Businesses must work at the same speed as the rest of the world. The race is always on and there are more and more players. New markets are opening and creating potential consumers". This is because, so Squinzi added: "in 15 years' time there will be approximately 1.5 billion people on average incomes and over half-a-billion of them will be in emerging countries. This means three Europes and four United States. Facts and figures that indicate just what potential we have in the future, potential that can be translated into growth. Most of the world will want to access to the symbols and consumer patterns of well-being. Taste, quality, refinedness, personality. There is a synonym for all this, a term that encompasses all these values: Made in Italy".

"Exports of Italian goods and services average 30% of the GNP, still way behind Germany's 52%, and our aim is to reach 40% of the GNP - so Squinzi emphasised - but far too few Italian businesses are exporting".

As regards this matter, Confindustria is striving to create the tools that will allow Italian companies to open up to the world, starting with close working relations with the ICE, the Italian Institute for Foreign Trade.

"We have great ambitions out on the markets and for many foreigners we are a model to be copied - so the President of the Italian industrialists went on to say – and we have a great opportunity to systematically showcase all this here in Milan, namely the Expo; the whole world will be visiting us. Businesses, visitors, institutions, schools. They will all be coming to Milan to ponder over one of the key issues of today and tomorrow: how everybody can feed themselves in a healthy and sustainable way. But they will not just be coming to Milan for that reason only. They will also come to Italy to find out what they can achieve in partnership with our country and our businesses, to touch with their own hands the potential for investment, carefully scrutinising how we have managed to create that certain Italian style everybody is so envious of".

**No place in Confindustria for the corrupt**

"Corrupt people harm the community and market - so Squinzi stated - and also cause serious damage to their competition and colleagues: these people have no place in Confindustria". So what about special laws and powers? "The answer is not to create more laws but rather to enforce those that already exist", so Squinzi warned. The reason for this, so the President announced, is that: "too many laws only encourages corruption". Italian industrialists need to work together to prevent all this corrupt business practice and that is why, so Squinzi claimed; "we have already set a number of codes in place, we have expelled business people attempting to take easy shortcuts or, worse still, operate in cahoots with organised crime. And we will be working just as hard to create a culture of transparency on all levels. We would like the legal system to be equally harsh but also fair, to be respected not feared".

"The magistracy, for which I have deep respect, have the power and duty to judge and punish - so Squinzi went on to say - and we have the duty to defend ourselves against corrupt people who harm us and to report any cases of extortion".

**Tax payers and tax authorities**

Again according to Squinzi, the Italian people's relationship with the tax authorities should improve: "Here again the malady is really serious and the figures speak for themselves: the tax authority takes 68.5% of profits according to the World Bank: the 19th highest rate in the world and highest of all among advanced economies".

The fact that Italy is still the second biggest manufacturer in Europe and one of the top ten in the world is an authentic miracle and, according to Squinzi, "here again over-taxation has led to tax evasion and avoidance among certain members of the population. The tax situation is a real jungle and there is an unwritten law that only those people who are "visible" are severely taxed and controlled".

Concluding his speech, Giorgio Squinzi stated that "the time has come to build a new Italy and it is our job to move beyond old ways of thinking and fearlessly embrace the new; we can only emerge from this seemingly endless recession by deciding to do what we have not had the courage to do for almost two decades: work for change".

# Paolo Caputo

## An architect for a new-look Milan, between urban design and new skyscrapers

Ordinary Professor of Architectural and Urban Design at the Polytechnic of Milan and Visiting Professor at numerous foreign universities, since the end of the 1970's Paolo Caputo and his Caputo Partnership design studio have been developing projects on an urban scale, public parks, museums, religious buildings and poly-functional, business and residential complexes. A privileged area of design has been the renovation and regeneration of former industrial and urban areas that had previously been decommissioned, such as the requalification of the Santa Giulia area in Milan (Italy), the design of new buildings for the Plasmon industrial zone in Milan and the transformation of the former Bassetti works in Vimercate, near Milan.

He has taken part in various national and international contests, and amongst his winning projects is the one for Palazzo Lombardia, the new headquarters of the Lombardy Regional Government in Milan, with the American design studio Pei Cobb Freed & Partners (see *Realtà Mapei International*, issue No. 35).
As one can read in the following article in this issue of the magazine, he was also involved in the Porta Nuova project in Milan along with 20 other international architects, with his name to be found on the design for the Solea residential tower which, together with its "sisters" Solaria and Aria by the Arquitectonica studio of Miami, has brought new life to the former Varesine area. Paolo Caputo talks about himself in this interview with *Realtà Mapei International.*

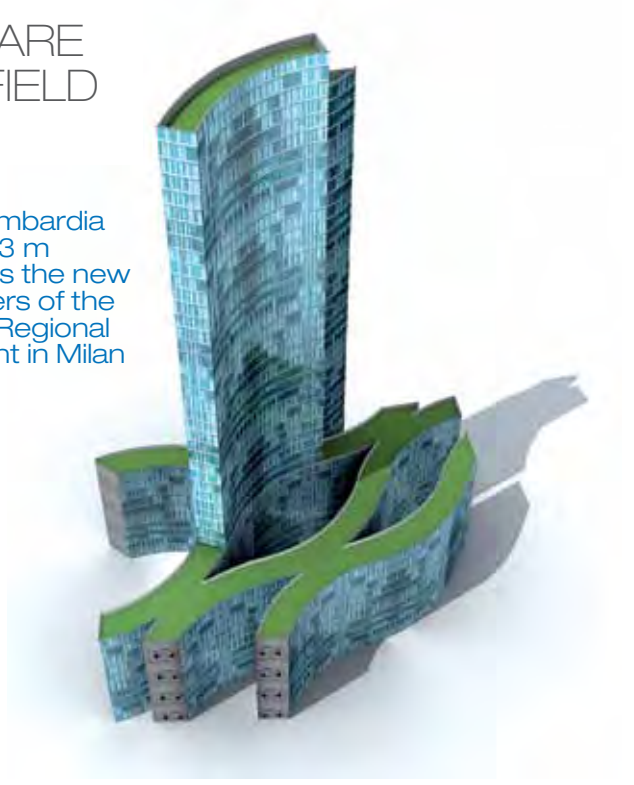
**After all your experience in this profession, what are the main differences in the relationship with institutions in Italy and abroad?**
I have worked in numerous countries and the overall picture I have of institutions, thanks to all the experiences I have had, is extremely complex. The relationship with institutions abroad has always been generally more comforting compared with the confusion, complexity and slow pace at which Italian institutions operate, especially when it comes to dealing with urbanisation and building procedures. I have come across situations, such as in Spain, where you work with engineering offices from the public sector that stand out for their sheer size and that are as technically well

equipped as the most aggressive and experienced private companies, or others from Jordan to China or Morocco that have a slim-line structure and operate very rapidly. I don't intend this as a criticism of the work carried out by public engineering offices in Italian cities: I can honestly say that the undersized offices of the Milan City Council often work heroically to deal with an enormous amount of work and complex problems within an acceptable timeframe. As everybody knows, we need to implement an intelligent and drastic simplification of procedures by working on the general and needlessly complicated framework of legislation, norms, responsibilities and levels of administration that tie our hands and suffocate us.

**You have collaborated with the Pei Cobb design studio on the construction of Palazzo Lombardia. What was it like to work with your American colleagues?**

At the beginning of the 1970's, when I was studying at the Polytechnic of Milan, I had the chance to take part in a didactic and research project between the Polytechnic of Milan and the Pennsylvania State University. I met George Miller on that occasion and we became friends for life. After graduating, George went to work at Pei Cobb Freed and Partners and eventually became one of the partners. I have known and visited that studio "for a lifetime". So for me it was certainly nothing new when we worked together on the Palazzo Lombardia project. Quite the opposite; I contacted them to ask if they were interested in taking part with my design studio in the international design contest for the new Lombardy Region headquarters, because I knew they had a vast experience in the design of institutional buildings. I had never actually worked on a joint project with Henry Cobb but I knew about his in-depth knowledge of European culture and his interest in urban history and phenomenology. To work with him on the project confirmed all my expectations: we worked on exactly the same wavelength with each and every choice, from the more general to the most detailed, sometimes with "exchanges" that have certainly served to improve the final layout of the building. Needless to say their wide experience of working on tall buildings and the technology involved was also, as far as I was concerned, the chance to acquire and perfect my know-how.

» BUILDINGS WITH A PRONOUNCED VERTICAL DEVELOPMENT ARE AN INTRIGUING FIELD OF DESIGN



Palazzo Lombardia with its 161.3 m height hosts the new headquarters of the Lombardy Regional Government in Milan

**You have taken part in requalification projects on former industrial areas (Bassetti area in Vimercate, Falk area in Arcore - near Milan - and Necchi area in Pavia - Northern Italy): what approach do you adopt when you take on such a complex commitment in territories with such a well defined history behind them?**

Since the 1980's I have worked on complex projects to renovate large urban areas and redesign real "pieces of the city". In actual fact, the Milan school of architecture founded

## The Solea tower, a "sister" of the Solaria and Aria towers in Milan

many of its design principles on the urban matrix of architecture and I believe it was the first one in Italy, and is maybe still the only one, that trains urban designers. It was of huge benefit to me to undergo this specific training at the Milan Polytechnic, which I then went on to feed thanks to my interest in this area of design. As a professional architect I have cultivated these opportunities and developed them in Italy and abroad, and naturally in Milan and around the city itself as well. Opportunities that I have managed to combine with my research activities at the Polytechnic that in the field of Urban Design have always found fertile ground for analysis and experimentation.

The complexity of the themes you have to measure yourself against also includes the necessary interpretation of historical phenomena that, over the years, have marked the growth, transformation and stratification of the urban contexts in which you operate from a design aspect. The subject forces you to carry out a careful, in-depth evaluation closely connected to the identity and character of the site that a design must enhance without cancelling it, to conserve and render it legible in spite of it being within a process of modification that represents innovation, the need to change, the new collective meanings interpreted by the area and downstream of the design transformations. To work on these areas also means developing an enormous capacity to coordinate, in that the complexity of the design means you must involve a multitude of skills and organise technical round tables with tens and, in some cases, hundreds of experts.

**You designed the Solea Tower, a sister of the Solaria and Aria Towers designed by Arquitectonica, presented during the last Milano Design Week (see *Realtà Mapei International* No. 48). Solea is inserted within a more articulated masterplan that has revolutionised an entire suburb. How did your work compare to the designs of your colleagues, starting with the Solaria and Aria, and then moving on to the Vertical Wood and the Unicredit Tower?**

The Solea Tower was a fantastic design experience, thanks to the quality of the work carried out by the client, for their level of organisation and the methods they applied in order to reach all the objectives laid down by the industrial plan which, I repeat, set the quality of the design and the execution of the work as firm conditions at the centre of all the scheduling. Within this operational framework, the comparison of the designs by the various authors, who had been called to contribute to the execution of this new and important chapter in the story of the city, took place above all at the masterplan and morphological level. The design aspects with respect to their sheer architectural scale were entrusted almost entirely to the free interpretation and expression of each single designer. The client relied on the personality and design skills of the various architects, reserving the right to share with them an evaluation role regarding their overall coherence, the materials used and their impact on the environment, although this didn't lead to particularly important modifications to the specific design qualities of each single design and/or building. In short, the actual "finished work" expressed by each designer was compared, and the relation among the designers went always trough the client's technical team.

**In 2011, in an article in the Italian newspaper *Corriere della sera* "Glass skyscrapers: beautiful, different and intelligent", you expressed your love for vertical buildings. In the last few years Milan has become a city that has learned to deal with heights again, especially with the City Life (see *Realtà Mapei International* No. 46) and Porta Nuova projects. Do you think the future of the city is height again?**

I find that buildings with a pronounced vertical development are an intriguing field of design. They play a very important role within the layout of modern, contemporary cities, they represent a resource in specific settings in which the very little amount of building land available is an unavoidable problem and they also represent a test bed with respect to numerous sectors of technology and construction. Having said that, however, I do believe that, with respect to the emergencies, the needs and the demands dictated by the cities of the future, tall buildings will not represent the only answer. As always we will have to evaluate each specific

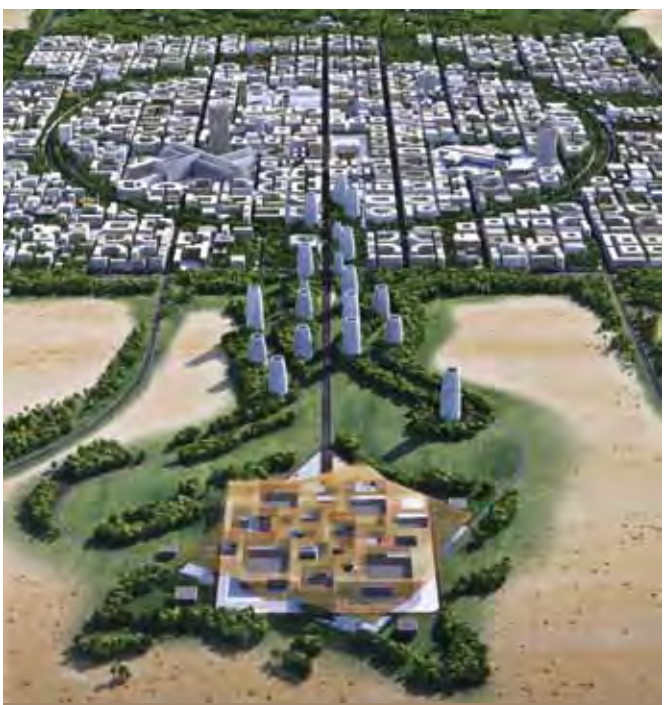
case and, above all, investigate more thoroughly into fields such as energy requirements and the right balance regarding these types of building. Not only that, their congruence will have to be carefully assessed from an historical, morphological, environmental and visual impact standpoint. And then there are the objective consistencies between living in a tall building (especially on the floors from 100 to 130 metres upwards) and specific functions. I find there is a certain incompatibility with buildings that high or even higher that are used as homes, while they are completely adequate for activities such as hotels, restaurants and entertainment places.
And while we are on this subject and my most recent design work, I also designed the concept of a Smart City for Abu Dhabi. It was called Renaissance City because one of its objectives was to bring man, and his most intimate existential dimension, back to being the centre of programmed reflections and the most sensitive design processes on the meaning of being part of the world in a period of rapid and epoch-making planetary mutation. And so the masterplan is based on networks made up of buildings between five and seven floors high, with rare exceptions represented by a few towers from one hundred to one hundred and fifty metres tall. And references to these dimensions may be found throughout history in European cities.

**Going back to Milan, which areas of the city do you think will be the next objective of a rejuvenation of the metropolis?**
The Milan area has its own Territorial Masterplan that basically indicates the lines of development, especially with regards to regenerating the city itself. However, we must wait until certain important sites are completed: City Life, Santa Giulia, Bovisa, Adriano and Rubattino. Strengthening and reallocating centres of excellence (universities, hospitals, stadiums, etc.) will act as an anchor for further processes to regenerate and revitalise parts of the city that, nevertheless, must learn to live in an increasingly metropolitan dimension.

**You are Professor of Architectural Design at the Polytechnic: what do you think of the way we are preparing the new generation of Italian architects?**
Thanks to decades of teaching experience at the Polytechnic I can sum it up with just a few short considerations. The first one regards the pre-university learning years: I am becoming more and more aware of a gap between those that have studied in high schools specialising in classical studies (where they acquired a coherent method for studying) and those that have studied in other types of school. The second one regards the didactic content and the extreme flexibility offered within the same subject matter and school year. As I see, it the offer should be much more regimented and coherent. The third, which is a positive, regards the wide spectrum of chances offered to students to be involved in a learning experience abroad during a degree course. These offer a chance for students to shake off their provincialism, to give an international dimension to their future professional prospects, to take a critical view and compare the work carried out at their home university and abroad. The fourth regards the predominance of theoretical aspects over those that are expressly applicative, those that have to do with the future work in this profession, that in some way limit an important skill set that students try to acquire during their scheduled work-experience periods in architecture studios. But how many are lucky enough to have work experience in studios that wish to train them rather than exploit them?
Having said that, I believe that 20-25% of our students leave university really well prepared for work, a similar percentage are just ready, while for the others the percentages are normally physiological and governed by social-anthropological statistics wherever you are, be it Milan, Boston or Barcelona.

**You have had quite an important career that has given much to the new urban fabric of Milan. But did everything really go so well? Are there buildings that you would have liked to have created differently?**
I don't have any particular regrets about the work I have produced as an architect. Of course, my most memorable and least stressful experiences were those that were carried out or developed alongside excellent clients. The passage of time leads you to reflect or regret, but nonetheless you tend to remove these thoughts pretty quickly if you place them within the historical context of when the design took shape. It is certainly much easier to work in a dimension of luxury, but when working with the social sector it is equally appropriate to aim for a kind of Franciscan, simple beauty. And that is what I have tried to do. Besides, the system of rules applied in the public sector and the recklessness of the private sector can sometimes deprive you of your control over the entire project development process or even the execution of the work itself. The final result is the fruit of many different ideas that are often light years away from the "sensitivity" of my own.

The Renaissance City project: a smart city designed by Caputo Partnership International for Abu Dhabi



# PORTA NU in Milan

## The project that has transformed the city skyline is almost complete

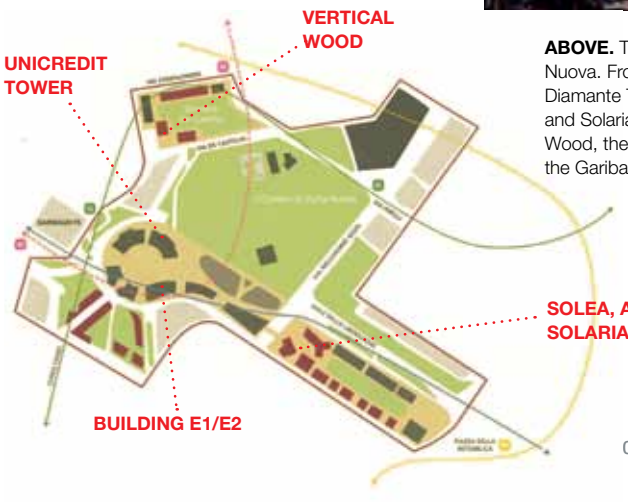
During the most recent Milano Design Week event, numerous Italian and foreign visitors had the chance to admire the new buildings and constructions for this urban development project that is quite rightly considered the one that is completely transforming the Milan skyline for years to come.
We are talking about the Porta Nuova Project, the urban and architectonic development plan for large portions of the Isola, Varesine and Garibaldi areas of the city which is now almost complete. It is a highly complex and articulated building site, creating an integrated system of exhibition, commercial, business and residential spaces interspersed with green parks that will breathe new life into an area that had been abandoned for years, almost left to its own devices in spite of its central location.

The design for the Porta Nuova area was a development of the three masterplans for the three areas involved, Garibaldi, Varesine and Isola, each one developed, respectively, by the design studios Pelli Clarke Pelli Architects, Kohn Pedersen Fox Architects and Stefano Boeri Architetti. The entire zone is linked to an important infrastructure hub, with three underground railway lines (M2, M3 and M5), a city railway link and two railway stations served by the high-speed rail network. The area of the project covers a total of 290,000 $m^2$ and extends from Porta Garibaldi railway station to Piazza della Repubblica and from Porta Nuova to the new headquarters of the Lombardy Regional Government (see the article on this complex on *Realtà Mapei International* No. 35), and is sub-divided into three distinct parts that take

# OVA AREA

their names from the original areas involved: Porta Nuova Garibaldi, Porta Nuova Varesine and Porta Nuova Isola. The client and owner of the area is the American company Hines. After laying out the masterplans, the Italian branch of the company Hines Italia sgr, with Country Head Manfredi Catella, awarded the design of each single building to 20 different Italian and foreign design studios.

This urban redevelopment operation may quite rightly be considered one of the largest sites in Europe, with a value of around 2 billion Euros. In just two years, two thousand construction workers have erected numerous buildings for various types of use, as well as underground car parks, cycle tracks, piazzas and a new metropolitan railway line. The new buildings are characterised by their height, with large gardens and parks with footpaths and cycle tracks, all designed to have a strong visual impact. Also, thanks to the different backgrounds and nationalities of the architects and design studios, the buildings are so varied that visiting the Porta Nuova district is like taking a stroll through the different styles of modern architecture. The Porta Nuova project is a modern example of poly-functional and eco-sustainable urban development and it is unique in Italy. The entire operation has had to meet the severe requirements set by the US Green Building Council in order to obtain LEED certification for all the buildings in Porta Nuova area.



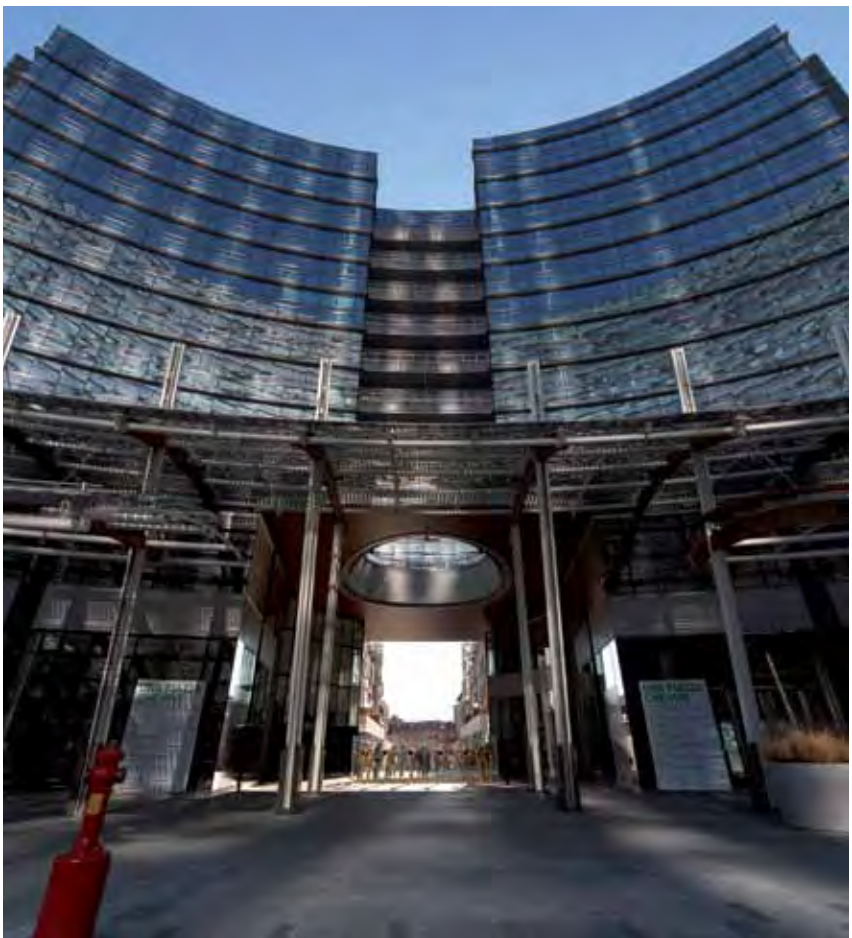

**ABOVE.** The skyline of Porta Nuova. From left to right: the Diamante Tower, the Solea, Aria and Solaria Towers, the Vertical Wood, the UniCredit Tower and the Garibaldi Towers.

PORTA NUOVA GARIBALDI

# UniCredit General Headquarters

The UniCredit complex comprises three towers of differing heights, with a curved form when viewed from above. Thanks to its height of 231 m (31 storeys), Tower A has become the tallest skyscraper in Milan and Italy and the twentieth tallest skyscraper in Europe. It is four times taller than the Leaning Tower of Pisa and twice as tall as the Duomo in Milan. The three Unicredit towers are in the Garibaldi area and were amongst the first buildings from the Porta Nuova project to be inaugurated. The redevelopment project was created by the Hines Group who, when they purchased more than 290,000 $m^2$ of derelict land in 2006, promised to carry out a massive urban redevelopment programme. The complex is in an ideal location at the centre of the area, near to the popular shopping and entertainment area of Corso Como and Garibaldi Station where two lines of the underground railway system (lines 2 and 5), a city railway link and the long-distance railway line converge. At the heart of the complex is Piazza Gae Aulenti, a 100 m diameter, semi-covered circular area known as “the podium”, a pedestrian zone sitting 6 m above road level. Completed by a large pond in the middle, it is reminiscent of a typical Italian piazza. It has now become one of the city’s tourist attractions with more than a million visitors since its inauguration.

Apart from Tower A, there are two other buildings overlooking the podium: Tower B (100 m tall with 22 storeys) and Tower C (50 m tall with 12 storeys). The complex was designed by the American architect César Pelli and is the general headquarters of UniCredit bank, with 4,000 of its employees now working there after being transferred from its 26 branches spread all over the city of Milan. The circular form of the tallest tower has an entirely glass-fronted north-facing façade and a south-facing façade modulated by the horizontal patterns of sunshades for a more correct distribution of the sunlight. The pillars and slabs of the three towers are in reinforced concrete. Its spire, an element that characterises the entire project, is 85 m tall and is in the form of a spiral tapering off towards the top. Its position, off-centre with respect to the centre of the building, was the subject of in-depth static studies regarding the impact of winds and atmospheric agents. An interesting fact: the spire is completely covered with LEDs that can light up in different colours. The buildings that make up the complex represent the first pilot project in Italy for LEED GOLD pre-certification, which requires a considerable reduction in energy consumption and a wider use of natural resources compared with standards specified by current norms and regulations. The green certification, awarded by the US Green Building Council, certifies 22.5% in energy savings, a 37.3% reduction in the use of drinkable water in the buildings, that all rainwater and 93% of site waste is recycled, that 20.5% of recycled materials were used in its construction and, finally, that 41% of the



**ON THESE PAGES.** Photos of the UniCredit complex that sits around Piazza Gae Aulenti. The most notable building is Tower A which, at 231 m, makes it the tallest skyscraper in Italy.

**ABOVE.** UniCredit Tower project will be completed by 2015, with the construction of a multipurpose center to accomodate the activities, the events and the projects both for the Group and for the city. These buildings are part of an urban renewal project involving the Porta Nuova Garibaldi, Isola and Varesine areas.

materials were from local manufacturers. Part of the complex is for commercial use (a total surface area of around 6,400 $m^2$) with showrooms and shops on two floors, while more than 50,000 $m^2$ are for business use. A walkway connects the podium to Corso Como street. A footpath and cycle track almost one km long connects Piazza Gae Aulenti to the Porta Nuova Varesine area.

### Mapei intervention

Mapei Technical Services Department also collaborated with the contractor that built the UniCredit headquarters, working alongside the designers and recommending Mapei products for waterproofing work and to bond ceramic tiles in the bathrooms. Metal elements were anchored in the concrete with MAPEFILL fluid expansive mortar. MAPEGROUT T60 thixotropic fibre-reinforced mortar was recommended to restore and repair certain parts of the structure, while MAPELASTIC two-component cementitious mortar was used for waterproofing work. Once the waterproofing work had been completed, KERAFLEX high-performance cementitious adhesive with no vertical slip and extended open time was used to bond the ceramic tiles.

### Technical Data

**UniCredit Headquarters**, Milan (Italy)
**Period of Construction:** 2009-2012
**Year of the Intervention:** 2012
**Intervention by Mapei:** supplying products for waterproofing the substrates and laying ceramic tiles
**Designers:** Pelli Clarke Pelli Architects, New Haven (USA)
**Client:** Hines Italia Sgr, Milan
**Contractor:** Colombo Costruzioni SpA, Lecco (Italy)
**Laying Companies:** Pavone Srl and Frattini Ceramiche
**Mapei Co-ordinators:** Alberto Arosio, Massimiliano Nicastro and Massimo Seregni, Mapei SpA (Italy)

### Mapei Products

Anchoring and repair works:
Mapefill, Mapegrout T60
Waterproofing substrates: Mapelastic
Laying ceramic tiles: Keraflex

**For further information see www.mapei.it and www.mapei.com**


# Vertical Wood

Eight hundred and fifty trees, half of which are tall trees, 4,000 shrubs and 15,000 bedding plants of 130 different species. What is more, each façade also has different types of plants, depending on which direction it faces. It is the vegetation characteristics rather than their height in metres that make these the two most long-awaited towers, the so-called "Vertical Wood" towers, on the new Porta Nuova skyline. Designed by Stefano Boeri, Gianandrea Barreca and Giovanni La Varra and comprising two buildings (the 111 m Tower E with 24 storeys and the 78 m Tower D with 17 storeys), the Vertical Wood will be in full bloom in Spring 2015, in time for the start of Expo. There are numerous advantages with a "green" dressing on a building, starting with more pure air thanks to the plants absorbing carbon dioxide and producing oxygen, the filtering and depuration of atmospheric pollution, and also a reduction in noise, protection from the sun and easier heating control with 21,000 plants absorbing sound and light waves and making the air cooler. To evaluate the impact of winds on this vertical forest, Milan Polytechnic and the Florida International University of Miami carried out a series of dedicated tests to verify the planting system and to make it more resistant in high-stress conditions with winds of up to 190 km/h. In so doing, apart from patenting a system to anchor the roots to a mesh to withstand strong gusts of wind, the load-bearing capacity of the balconies was tripled so they could bear the weight of the 5 $m^2$ tubs of soil in which the plants are rooted. Apart from providing a vegetation ecosystem comparable to 2 hectares of woodland, the Vertical Wood also has several eco-compatible innovations such as the system to recycle and purify the water from sinks, baths and showers in the towers so that the gardens may be watered with very little demand on the water system.

**Mapei intervention**

Part of the work carried out inside the towers involved the use of Mapei products and systems. The consultancy and technical assistance offered by Mapei was highly appreciated by both the designers and the workers who actually used the products on site.

White ELASTORAPID two-component, improved, highly deformable, quick-setting cementitious adhesive with no vertical slip and extended open time and KERAFLEX MAXI S1 high performance, cementitious adhesive with Low Dust technology were chosen to bond the marble slabs.

MAPEGROUT FAST-SET shrinkage-compensated mortar was used in those areas where the concrete needed to be restored.

**Technical Data**

**Vertical Wood**, Milan
**Period of Construction:** 2009-2014
**Period of the Intervention:** 2012-2014
**Intervention by Mapei:** supplying products to install stone materials
**Designers:** Stefano Boeri Architetti, Milan
**Vegetation Designers:** Emanuela Borio, Laura Gatti
**Client:** Hines Italia sgr
**Contractor:** Colombo Costruzioni SpA,
**Laying Company:** Bosisio Srl
**Mapei Co-ordinators:** Alessio Risso and Massimiliano Nicastro, Mapei SpA (Italy)

**Mapei Products**

Laying stone materials: Elastorapid, Keraflex Maxi S1
Repairing concrete: Mapegrout Fast-Set

**For further information see www.mapei.it and www.mapei.com**

PORTA NUOVA GARIBALDI

# Building E1/E2

A giant comma is what this building looks like if viewed from above. The new Building E1/E2 building was designed by the Piuarch design studio from Milan and is characterised by its sinuous, undulating forms and contained vertical development, chosen specifically to make this structure more easily recognised within the overall project area and to go somewhat against the grain of a general plan that involved the construction of larger volume buildings and towers. Designed for commercial and business use only, the new Building E1/E2 complex has a total surface area of 22,500 $m^2$ distributed on five storeys for an overall height of 26 m. The ground floor, occupied by several showrooms already open to the public, is "protected" by a large glass portico, while the upper floors are for office use. The pre-cast reinforced concrete structure allows quite marked contrasts to be included in its form, while the façade, covered entirely with glass with rhythmically-spaced steel uprights, guarantees that natural light illuminates every floor of the building. Apart from its sinuous lines and the white covering that completely encloses the structure, the 140 m long building also stands out for its two distinct façades: the north-facing side of the building overlooking the central piazza has a glass covering, similar to a large screen, while the south-facing side has a curved profile protected by a system of sun barriers comprising vertical sun screens made from engraved glass.

**IN THESE PHOTOS.** The sinuous forms of Building E1/E2 overlooking Piazza Gae Aulenti.

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## APPLYING MAPEI PRODUCTS

**PHOTO 1.** The surface was grinded before applying PRIMER SN and QUARTZ 0.5.
**PHOTO 2.** The substrates were vacuumed off before applying MAPEFLOOR FINISH 55 polyurethane finish.
**PHOTO 3.** Applying MAPEFLOOR FINISH 55.

3

### Mapei intervention

In some corridors and stairs the substrates were treated with PRIMER SN two-component epoxy primer followed by a dry-shake finish of QUARTZ 1.2. ULTRATOP self-levelling mortar was then applied. The excess quartz sand was vacuumed off and once the ULTRATOP-coated surfaces hardened, they were protected with MAPEFLOOR FINISH 52 W two-component, polyurethane finishing product which also made them not absorbent.
In other corridors and stairs the substrates were prepared using a diamond grinder to roughen the substrate and enable the floor covering to bond perfectly. After vacuuming off all traces of dust, a coat of PRIMER SN was applied followed by a dry-shake finish of QUARTZ 0.5. The following day the excess sand was vacuumed off, the surface was sanded and all residues were vacuumed off.
Work continued by coating the surface with MAPECOAT I 24 epoxy paint, mixed with MAPECOLOR PASTE, and with MAPEFLOOR FINISH 55 two-component polyurethane finish particularly resistant to wear and ultra-violet rays with a roller.

### Technical Data

**E1/E2 Building**, Milan
**Period of Construction:** 2011-2013
**Year of the Intervention:** 2013
**Intervention by Mapei:** supplying products for preparing the substrates; building and finishing resin floorings in the corridors and on the stairs
**Designers:** Studio Piuarch, Milan
**Client:** Hines Italia sgr
**Contractor:** Colombo Costruzioni SpA
**Floor Laying Company:** Impresa Donelli, Busto Garolfo (Italy)
**Mapei Co-ordinators:** Alberto Arosio and Massimiliano Nicastro, Mapei SpA (Italy)

### Mapei Products

Preparing the substrates: Primer SN, Quartz 1.2, Quartz 0.5
Laying and finishing the resin floorings: Mapecolor Paste, Mapefloor Finish 55, Mapefloor Finish 52 W, Ultratop, Mapecolor Paste, Mapecoat I 24

**For further information see www.mapei.it and www.mapei.com**

PORTA NUOVA VARESINE

# The SOLEA, SOLARIA and ARIA Towers

These three towers in varying heights form a residential complex spread over a large area in the heart of the Varesine district, just a short walk from Piazza Gae Aulenti. Solaria, which with its height of 143 m and 37 storeys (34 above ground) makes it the tallest residential building in Italy, and Aria (17 storeys) were designed by the Arquitectonica design studio from Miami together with Caputo Partnership, while Solea (the lowest building with 15 storeys and a height of 69 m) was designed by the Italian studio Caputo Partnership (see the previous article).

**Solea tower**

The first impression of the Solea tower is the contrast between the shiny white glass and opaque black of the natural stone that marks out the recessed balconies and the volumes of the entire structure. The tower is 15 storeys high and is divided into apartments of various sizes. The upper floors have apartments divided over two levels both internally and externally on the balconies and, on the top two floors, there is a single apartment with a terrace and breathtaking views over the entire Porta Nuova area. Each apartment has at least one recessed balcony, a real private garden so that the indoors can extend towards the outside of the apartment.

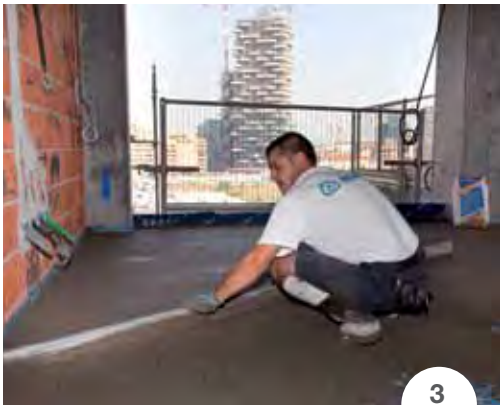
**Solaria and Aria towers**

Inaugurated at the end of May 2014, these two towers were designed by the architects Bernardo Fort-Brescia and Laurinda Spear from the Arquitectonica design studio. Both skyscrapers have residential areas, as well as large shopping areas, gymnasiums, swimming pools and communal areas, and they represent a concentration of design, technological innovation and eco-sustainable design.

Solaria is made up of three separate wings united in a central nucleus, through which the natural light dissipates throughout the whole skyscraper down as far as the ground floor. The skyscraper has 100 apartments from 70 to 260 $m^2$, with the largest super-luxury apartments measuring 650 $m^2$ and spread over two levels on the top floors, surrounded by hanging gardens. Aria tower, which is lower than the previous one, is made up of two independent structures with 42 apartments. The parapets are made from opalescent glass with progressive transparency to guarantee a spectacular view of the city. Connected to Piazza della Repubblica by a footpath, Solaria and Aria face north to overlook the Gardens of Porta Nuova and south to overlook a park of 4 thousand $m^2$. Both towers are LEED certified.
A common denominator for Solaria, Aria and Solea is their interior design, all by the same design studio Dolce Vita Homes.

**Mapei intervention**

In the first phase of the works Mapei supplied, through Holcim ready-mix concrete manufacturer, DYNAMON



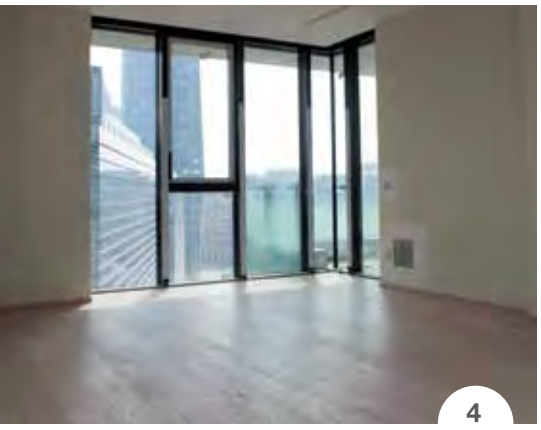


**PHOTO 1.** The overlaps in the MAPESILENT ROLL sheets were sealed with MAPESILENT TAPE.
**PHOTO 2.** MAPESILENT BAND R 50/160 tape was bonded along the walls.
**PHOTO 3.** After positioning the heating elements, the screeds were made with TOPCEM PRONTO.
**PHOTO 4.** The wenge wooden flooring was bonded with ULTRABOND P913 2K and the perimeter joints were sealed with SILWOOD.
**PHOTO 5.** Natural stone slabs were bonded on the floors and walls in the bathrooms with KERAFLEX MAXI S1, KERALASTIC and KERALASTIC T.

SP1 super-plasticizer based on a modified acrylic polymer. The admixture was used to prepare the concrete for building the foundations and underground walls which both belonged to a waterproofing system called "white tank". The use of DYNAMON SP1 allowed a relevant water reduction in the mix and the production and use of concrete featuring low water/cement ratio and very high mechanical strengths. These properties were both needed to meet the requirements related to the slabs' and foundation walls' load-bearing and waterproofing capacities. Inside the apartments in the three towers, the client wanted an efficient system that guaranteed good soundproofing against the noise caused by footsteps.

After carrying out several site surveys, Mapei Technical Services proposed floating screeds soundproofed by applying the MAPESILENT soundproofing system. Around 20,000 m$^2$ of MAPESILENT ROLL sheets made of a bitumen and special elasto-plastomeric polymer membrane sandwiched together with a resilient layer of polyester fibre were applied in a double layer. After making sure the various sheets of MAPESILENT ROLL were perfectly positioned, all the overlaps were sealed with MAPESILENT TAPE closed-cell foam polyethylene adhesive sealing tape.

MAPESILENT BAND R 50/160 roll was placed around the edges of the walls and around any element passing through the screed. After positioning the heating elements, a 5 cm thick self-bearing floating screed was made using TOPCEM PRONTO ready-to-use, normal-setting, mortar for quick-drying screeds.

Mapei products were then also used to bond the wenge and oak floorboards (18x200 cm and 19.5x240 cm) over an area of 1,500 and 3,000 m$^2$ respectively with ULTRABOND P913 2K two-component adhesive and SILWOOD acrylic sealant to seal perimeter joints and floor joints. Natural stone slabs were installed on the floors and walls in the bathrooms using the adhesives KERALASTIC, KERALASTIC T and KERAFLEX MAXI S1. Slopes were created on the terraces on every storey using PLANITOP FAST 330.

## Technical Data

**Solera, Aria and Solea towers**, Milan
**Period of Construction:** 2010-2014
**Year of the Intervention:** 2012-2014
**Intervention by Mapei:** supplying products for building soundproof floating screeds, for laying wooden floors and stone slabs on walls and floors
**Designers:** Bernardo Fort-Brescia and Laurinda Spear for Arquitectonica (Miami, USA) for the Solera and Aria towers; Paolo Caputo for Caputo Partnership (Milan) for the Solea tower
**Client:** Hines Italia sgr
**Contractor:** ATI CMB-Unieco
**Building and Laying Companies:** Emmezeta Snc for building the screeds; Impresa Edile Lamotta Srl for laying the wooden floors; Milgem for laying the marble slabs
**Laid Materials:** wooden floors and marble slabs
**Mapei Distributor for Concrete Admixtures:** Holchim
**Mapei Co-ordinators:** Pietro Lattarulo, Antonino Munafò, Massimiliano Nicastro, Alessio Risso, Alessandro Sacchi, Massimo Seregni, Mapei SpA (Italy)

## Mapei Products

Preparing and soundproofing the screeds: Mapesilent Band R 50/160, Mapesilent Roll, Mapesilent Tape, Planitop Fast 330, Topcem Pronto
Laying wooden floors: Silwood, Ultrabond P913 2K
Laying stone materials: Keraflex Maxi S1, Keralastic, Keralastic T
Creating slopes: Planitop Fast 330

**For further information see www.mapei.it and www.mapei.com**

# The new Florence Opera House

Experience and cutting-edge product systems to renovate the façades and install new rubber wall and floor coverings inside the theatre

Still considered to be the most majestic civil building in Florence after many centuries, the new Florence Opera House has the potential to give the city the international status it has been seeking for years. The new home of the Maggio Musicale Fiorentino music festival is an ambitious cultural project and has been defined as a "music and culture park" with a unique range of attractions on offer: an opera house, an auditorium and an open-air amphi-theatre, which may all be used at the same time. The work was carried out to celebrate the 150th anniversary of Italian Unity and has a strategic role to play both as a central city attraction and as a hub for the city's calendar of cultural events.

The entire complex was designed by Paolo Desideri from the Roman design studio Studio ABDR and the idea was based on its original function in Greek cities: a place where people could gather in a raised position around the edges. Those who watch from the terraces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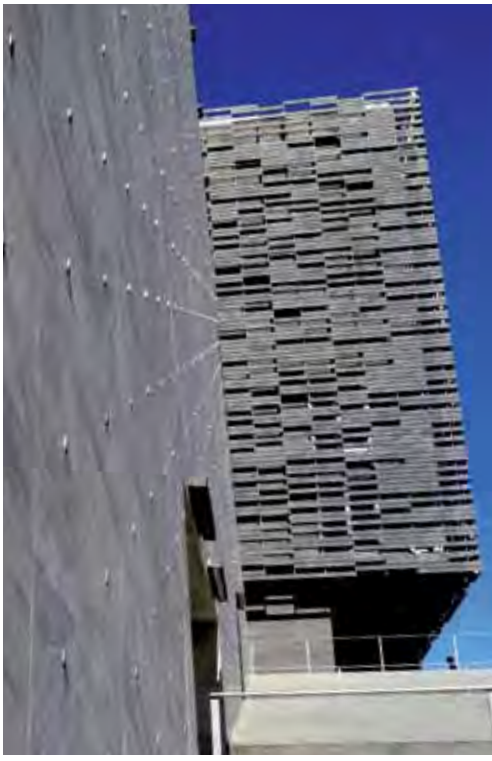
## AN AMBITIOUS CULTURAL PROJECT, DEFINED AS A "MUSIC AND CULTURE PARK"



are able to admire the beautiful Florence and its "sacred" places, such as the Duomo and Palazzo Vecchio.

As far as the theatre is concerned, it has one of the most avant-garde scenery systems in the world and exceptional acoustics: the most advanced techniques currently available were used to achieve such a standard. Maestro Zubin Mehta, Chief Conductor of the Maggio Musicale Fiorentino festival, who followed the project and work on site from the very start, wanted the distance between the public and the stage to be reduced to a minimum; in fact, the stalls have no traditional parapet and are located in the form of a highly evocative wave. This multi-functional artistic hub has three halls with a capacity of 5,000 spectators. The opera hall, with walls that are able to transmit the sound in the direction of the spectators without echoes or bounce, has a seating capacity of 1,800. The concert hall in the auditorium has a seating capacity of 1,000, while the amphitheatre on the roof, with a charming view overlooking the city, has open-air seating for 2,000 people.

Inaugurated on the 21st of December 2011 with a performance of Beethoven's *Ninth Symphony* conducted by Zubin Mehta, the building was closed again so that the final touches could be made – including work on the scenery system – and was then officially opened on the 10th of May last year.

Mapei intervened during this closure with professional technicians and product systems to

**PHOTOS 1 and 2.** The blocks prior to the intervention.
**PHOTO 3.** The elastic sealant had been pushed out of the joint's site in a number of places.
**PHOTO 4.** One of the blocks prior to the intervention.
**PHOTO 5.** The old vertical substrate behind the thin porcelain covering.
**PHOTO 6.** The surface of the blocks after removing the substrate.


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**PHOTO 7.** The new screed made from TOPCEM PRONTO.
**PHOTO 8.** Applying MAPELASTIC SMART +MAPETEX SEL on the screeds.
**PHOTO 9.** Steel run-off channel fixed in place with ADESILEX PG4 sprinkled-off with quartz.
**PHOTO 10.** Installing porcelain tiles: KERALASTIC adhesive was applied on both the substrate and the back of the tile (double-buttering technique).
**PHOTO 11.** Positioning the porcelain tiles.
**PHOTO 12.** The porcelain tiles were bonded to a wall over a substrate waterproofed with MAPELASTIC SMART.
**PHOTO 13.** Application of MAPESIL LM, used to seal the tile joints.
**PHOTO 14.** The sheets of rubber were bonded on the indoor floorings with ULTRABOND ECO VS 90.
**PHOTO 15.** The rubber flooring was bonded on the stairs with ADESILEX VZ.
**PHOTO 16.** One of the areas where rubber flooring was laid.

finish off the work, as well as to solve a number of problems that had come to light on the external façades immediately after the initial opening of the theatre.

**Diagnosis and intervention strategy**

In October 2013, restructuring work commenced on the severely deteriorated external façades damaged by carbonate calcium efflorescence, on areas that had become detached and were damaged by severe cracking. It was decided to intervene exclusively on the blocks' structures and to leave aside the parts on the façades where the thin slabs had been bonded to the thermal insulation system. In the blocks – spaces around 100 m long, 8 m wide and 1.5 m tall adjacent to and just above the flight of stairs under which the service lines pass – the thin porcelain tiles had been bonded to the cementitious substrates and renders. This external covering, comprising slabs of Kerlite thin porcelain tiles by Cotto d'Este measuring 50x150x3.5cm, was badly cracked and detached from the substrate, and there were also unsightly white carbonate efflorescence on the surface. Also, around the joints, the sealant had been pushed out of the joints' site in a number of places.

It was found that one of the reasons for this precocious and serious deterioration was due to several actions all at the same time, and the temperature had played a particularly important role. In fact, because the entire façade is made up of grey porcelain tiles, the temperature on the surface can sometimes be higher than 80 °C in hot weather. Such high temperatures can cause high stresses, which are then discharged into the covering itself, probably the most fragile part of the entire system.

**Rebuilding the substrates and bonding the tiles**

The intervention method was studied down to the smallest details so that the new system

would be as safe as possible and capable of safeguarding the part of the structure subject to movement and deformation. Bearing this in mind, work was carried out to make the substrates more stable and waterproof. To withstand the high stresses in play on this particular type of covering, the intervention included a new layout for the joints, properly channelling the flow of rainwater more correctly and an advanced bonding system developed by Mapei. The first step was to demolish the old sand/cement substrate, which was badly damaged and impregnated with water, and to remove the Kerlite flooring down to the structure of the floor slab.

A new screed was made using TOPCEM PRONTO ready-to-use, normal-setting, controlled-shrinkage mortar for quick-drying screeds (ceramic can be installed after just 24 hours), that allows screeds to be made with a residual moisture content of less than 2% after just 4 days curing.

A long time was taken before the correct layout and dimensions of the drainage channels to help get rid of rainwater were defined, and they were positioned lengthways on the blocks as well as transversally.

Because of the number of cracks in the covering and the number of Kerlite porcelain tiles that had become detached from the walls of the blocks, all the tiles were removed and a new render had to be applied made from NIVOPLAN smoothing mortar mixed with PLANICRETE synthetic latex rubber at a rate of 2 litres for each 25 kg bag of NIVOPLAN.

To completely protect the structure of the blocks against future water seepage, it was decided to waterproof all the structures with MAPELASTIC SMART two-component, high-flexibility cementitious mortar, applied by trowel or roller in layers at least 2 mm thick, reinforced with MAPETEX SEL macro-holed, perforated, non-woven polypropylene fabric.

ADESILEX PG4 two-component epoxy adhesive, sprinkled-off with dry quartz in a proper grain size, was used to prepare the surface of the steel rainwater runoff channels in order to allow the waterproofing system to properly bond on the metallic surfaces.

Considering all the movements and deformations in the structures, it was decided to bond the new thin porcelain wall and floor coverings with KERALASTIC two-component, high-performance polyurethane adhesive, class R2 according to EN 12004. Because of the size of the tiles, a 5 mm joint was left between them. The Kerlite tiles were bonded using the double-buttering technique, that is, by spreading the adhesive on both the substrate and the back of the tile, to ensure a perfect bond and prevent any gaps.

Because of the special conditions on this particular building site and the level of movement the coverings are subjected to, it was


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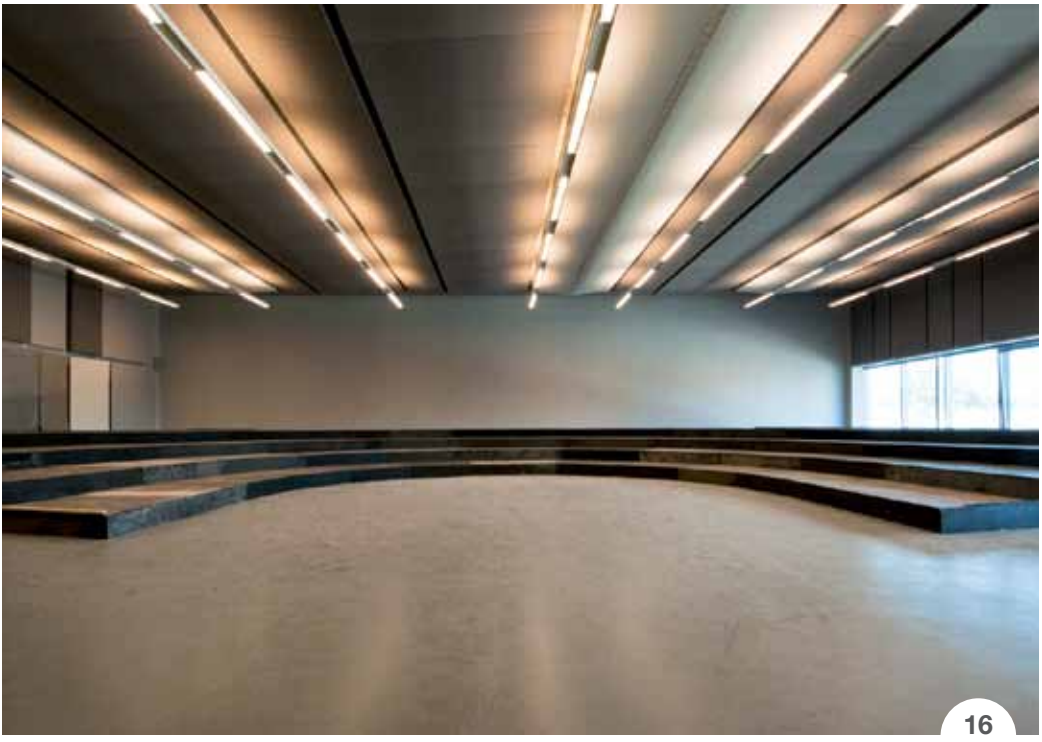
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## IN THE SPOTLIGHT

**KERALASTIC**

It is a two-component, solvent- and water-free adhesives which is flexible and waterproof. It features good workability; excellent durability and resistance to ageing; perfect adhesion to all surfaces used in building; high deformability. It is ideal for indoor and outdoor bonding of wall and floor ceramic tiles, stone material and mosaics of all types on screeds, renders, concrete, asphalt, wood, metal, PVC, reinforced polyester, asbestos-cement, gypsum, etc. It can contribute up to **4 points** to obtain the **LEED** certification.

**TO THE LEFT.** The Opera House upon completion of work.
**ABOVE.** The blocks area upon completion of work.

decided to use MAPESIL LM neutral silicone sealant rather than conventional cementitious grout to seal the joints between the tiles. Some of the walls in the blocks were made from 5 cm thick sheet metal sandwich panels. For these walls, it was decided to apply a coat of EPORIP dusted with sand and then smooth over the surface of the panels with PLANITOP HDM MAXI two-component, high ductility, fibre-reinforced, pozzolan-reaction mortar with MAPEGRID G alkali-resistant glass fibre mesh embedded in the mortar. These surfaces were also waterproofed with MAPELASTIC SMART + MAPETEX SEL.

### Installation of rubber coverings in the theatre

The floors in the Opera House (around 7,000 $m^2$) indoor areas, dressing rooms, corridors and stairs were covered with 2 mm thick rubber flooring, while all the walls were covered with 1 mm thick rubber covering. The rubber was bonded to the floors with ADESILEX G19 two-component epoxy-polyurethane adhesive for rubber flooring. The wall covering and certain sections of the flooring were bonded with ULTRABOND ECO VS90 acrylic adhesive in water dispersion with very low emission level of volatile organic compounds (VOC), while the rubber covering for the stairs was bonded with ADESILEX VZ double-buttering polychloroprenic adhesive. Before bonding the rubber, all the cementitious flooring had been smoothed over with NIVORAPID and PLANIPATCH mixed with LATEX PLUS.

Around 2,500 $m^2$ of floating engineered pre-finished wooden flooring was installed by bonding the heads with ADESIVIL D3 solvent-free adhesive for floating pre-finished wood and laminate flooring.

It took around 9 months to carry out all the work on the outside and finish off the work on the inside. An important job in which, once again, Mapei demonstrated all their experience and ability to meet any challenge and solve any problem you come across in the building industry.

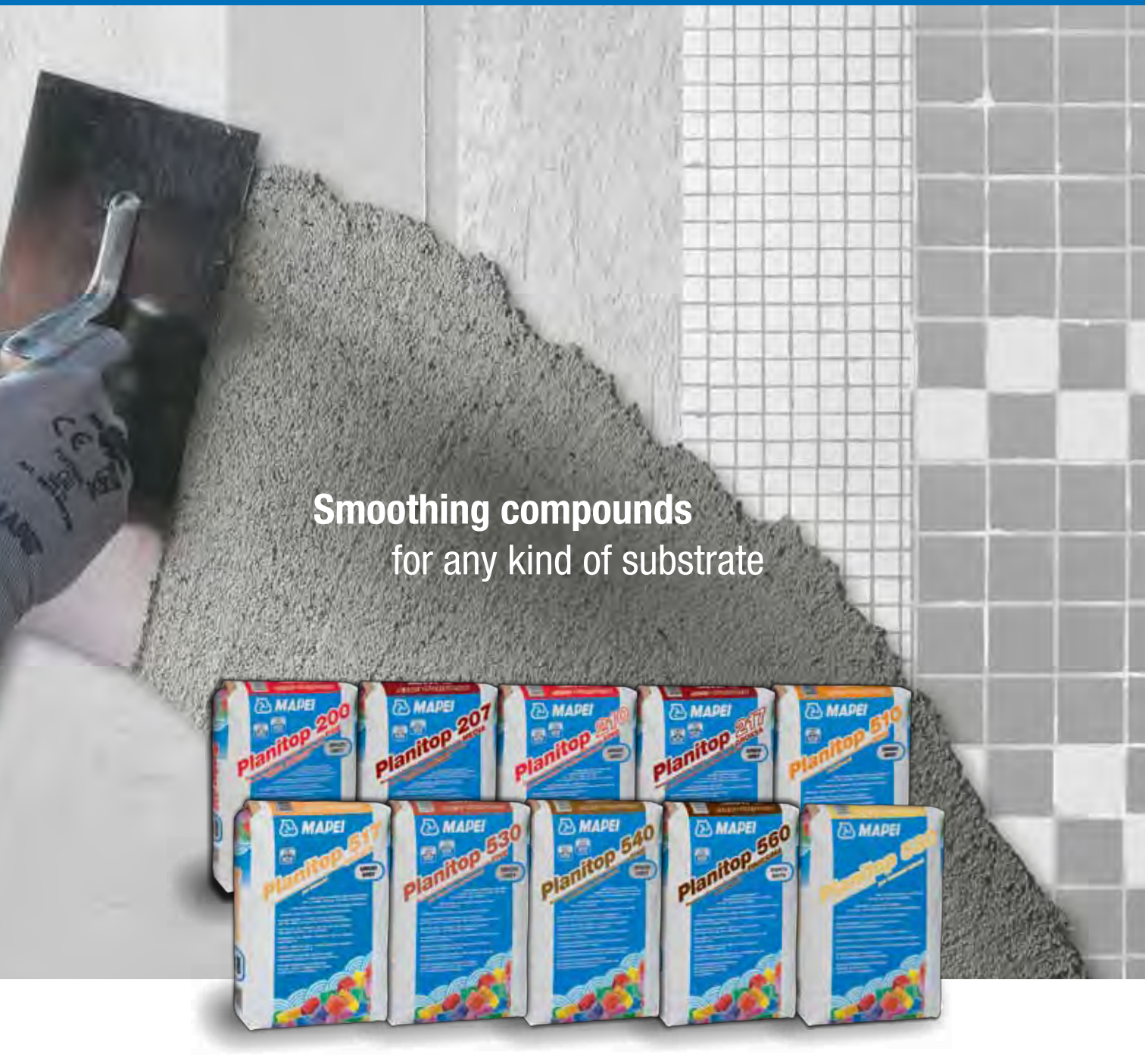
### Technical Data

**New Opera House,** Florence (Italy)
**Period of Construction:** 2009-2011
**Period of the Intervention:** 2013-2014
**Intervention by Mapei:** supplying products for waterproofing substrates, renovating the façades and laying rubber coverings indoor
**Client:** Florence City Council
**Project:** Studio ABDR Architetti Associati, Rome (Italy)
**Building Company:** Parco della Musica Scarl
**Laid Materials:** porcelain slabs by Cotto d'Este
**Mapei Co-ordinators:** Massimo Lombardi, Matteo Venturini (Mapei SpA)

### Mapei Products

Preparing the substrates: Eporip, Nivoplan, Planicrete, Planitop HDM Maxi, Mapegrid G 120, Topcem Pronto
Waterproofing the substrates: Mapelastic Smart, Mapetex Sel
Fixing drainage channels: Adesilex PG4
Laying ceramic tiles and grouting joints: Keralastic, Mapesil LM
Preparing substrates before laying rubber: Latex Plus, Nivorapid, Planipatch
Laying rubber coverings: Adesilex G19, Ultrabond Eco VS 90, Adesilex VZ
Laying floating prefinished wooden floorings: Adesivil D3

**For further information see www.mapei.it and www.mapei.com**




# *Planitop Line*

**One-component, high-adhesion smoothing compounds for substrates in interiors and exteriors.**

The wide range of interior and exterior substrates commonly used in the building industry (traditional or ready-mixed, cured and fresh renders, plastic coverings, glass mosaics, porcelain tiles) often need to be properly smoothed before painting or applying mineral and synthetic coverings.

- Cement- and lime-cement-based
- High adhesion to any kind of substrate
- Excellent trowellability
- Fine- or coarse-textured
- For smooth or natural coatings

product info

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ADHESIVES · SEALANTS · CHEMICAL PRODUCTS FOR BUILDING

# The economy and the building industry in Eastern Europe in 2014

## The outlook from the European Commission


Internationalisation is the foundation stone on which Mapei has constructed its growth as a company. Costant development with easy to measure data, such as turnover (2.3 billion Euros) and number of employees (7500) all around the world, as the main indicators to illustrate the company's success.
For Mapei, however, internationalisation has never meant "delocalisation". To be closer to local demand and reduce transport costs to a minimum have always been the two mainstays of this process, with the aim of being closer to contractors and clients without ever overlooking the needs of each individual country.
Europe represents a market of primary importance for the company, and the countries from Eastern Europe in particular are currently those that offer a proportionally higher rate of growth compared with those from Western Europe.
A look at the economic trend in Europe, and the trend in the European building industry in particular, allows us to understand if there are the conditions to announce that we are at a turning point in the economic crisis we are all going through and if we can begin to talk about growth.
Focusing on the Eastern European member states of the EU also gives us the chance to understand the opportunities available, for Mapei and others, to carry on investing resources in an area which, in spite of being hit by the ongoing crisis, is going through a period of rapid modernisation.

The source of the data analysed in this article are the recent estimates released by the IMF (International Monetary Fund) and the forecasts by the European Commission regarding trends in the economy and the building sector for countries that form the European Union.

### The global economic situation

Forecasts indicate that, from 2014, the global economic situ-


According to the European Commission's recent estimates, the global economic situation should improve.


ation should improve and that overall global GDP should increase by 3.4%, and then continue increasing in 2015 by almost 4%. The forecast for the Eurozone is for more modest results, with an estimated growth of slightly over 1% both in 2014 and in 2015.

For the 2014-2015 period, economic development in the United States should touch around +3%, going back to the levels registered in 2012, while in Japan GDP is expected to grow by an average of about 1.5%, in line with the previous two-year period. Economic development for 2014-2015 in China should remain particularly high (over +7%), albeit slightly lower compared with the previous year. All the other emerging markets, on the other hand, should have a progressively improving rate of economic growth for 2014, going on to strengthen even further in 2015.

**The top 5 and Italy**

Of the top five European economies - Germany, Great Britain, Spain, France and Italy - that together generate more than 75% of the total GDP for the European Union, Italy had the worst economic figures in 2013, with a fall of 1.9% according to the European Commission. The IMF's forecasts for Italy indicate an average of around +0.3% for this year and +1.1% for 2015. Estimates seem to indicate that inflation will remain low while the figures for unemployment, in 2014 at least, will continue to grow, and then fall slightly in 2015. According to figures published by the Commission, the 2013 construction market in Italy had a particularly negative trend, recording a drop of around 7%, an estimate that was also confirmed by ANCE, the Italian Constructors Association, and by the Italian consulting agency Prometeia. In 2014 the construction sector will continue its period of recession. The market will probably record yet another year of lower investments in new homes, as well as a recession in the public and private non-residential sector. An increase in investments in the renovation sector should help ease the overall fall in the construction industry. According to ANCE, the only way of avoiding a recession in the Italian building industry would be a massive investment programme in public building works.

» THE DEVELOPMENT FORECAST FOR THE HUNGARIAN BUILDING SECTOR IS THE HIGHEST OF ALL THE EASTERN EUROPEAN COUNTRIES

**Eastern European member states of the EU and Serbia**

Let us now have a look at the estimates for the construction sector in the Eastern European countries.

The **Polish economy** is one of the most solid in Europe, with an average growth in GDP over the last ten years of more than 4%. Last year's rate of development was lower (+1.6%), but for the 2014-2015 period the estimated average growth according to the Commission will be around 3%. In 2013, with the projects for the 2012 European Football Championships completed and cuts in public spending, investments in construction work according to the European Commission fell by around 3%. More investments in infrastructure projects and private houses should help the development of the construction market, which is expected to grow by around 4% in 2014 and over 5% in 2015.

The timid recovery of the **Hungarian economy** in 2013 was also reflected in the increase in investments in construction work, which have started to grow again after a lengthy period of recession. The development forecast for the building sector is the highest of all the Eastern European countries and should include both the residential sector and other market sectors. The European Commission's forecast is shared by Euroconstruct (a network of 19 European research institutes) that believes the rate of growth in investments may even exceed 7%.

Estimates issued by the European Commission indicate a positive macroeconomic climate for **Romania**. In fact, GDP last year increased by 3.5% and the forecast annual rate of growth for the two-year period 2014-2015 is over 2%. For both this year and 2015, estimated development in the construction market will be higher than

» THE POLISH ECONOMY IS ONE OF THE MOST SOLID IN EUROPE

that of GDP: in fact, the average annual rate of growth in investments should be more than 3%.

According to data collected by the Romanian National Institute of Statistics, Eurostat (the European Union's statistical office) and local financial newspapers, the construction market in Romania will need 10 billion Euros in 2014.

The total volume of construction work for 2014 and 2015 is an estimated 5%. For the start of 2014, on the other hand, there has been an increase of more than 7% on a yearly basis.

During the first quarter of 2014, the cement market was influenced by the historic fusion of two of the largest manufacturers in the world, Lafarge and Holcim.

The local ceramic tiles market, dominated by imports, was worth around 110 million Euros last year, with a loss of between 5% and 15% compared with the previous year. Estimates for 2014 are optimistic, but an important increase in the sector depends on funds being released for construction work, particularly in the residential sector.

In **Bulgaria** too, with an estimated growth in the economy of around 8%, the building sector for the period 2014-2015 should register an annual increase of over 2%.

All this in spite of economists still being very uncertain, particularly regarding the construction market, one of the sectors that have suffered most over the last 5 years. Low market demand, a lack of investments, large company debts, high availability in the labour market and deflation are the main factors that have had a high impact on the construction sector.

There should be sustained economic growth in **Estonia** and **Lithuania** in both 2014 and 2015. In fact, the average annual increase in GDP for this two-year period should be around 3% in Estonia and over 3% in Lithuania. As far as the construction market is concerned, the European Commission estimates for Lithuania indicate an average growth of around 5%, while in Estonia there should be a drop in market demand in 2014 and then a recovery in the building sector starting in 2015.

In 2013, there was a negative economic trend in the **Czech Republic** and GDP fell by 0,9%. Estimates compiled by the European Commission for the period 2014-2015 are moderately positive: in fact, the estimated average annual rate of economic growth will be around 2%, slightly higher than the overall average for the countries in the European Union. After five years of deep recession, investments in the Czech building industry in 2014 should be more or less stagnant, leaving space in 2015 for an estimated market growth of over 1%. Forecasts from the European Commission are more optimistic than those presented by Euroconstruct, which believes 2014 will also be characterised by a fall in investments in construction work.

In **Slovakia**, forecasts based on the trend in GDP and the construction sector are very similar. The estimated rate of growth will range between 2% and 3% in 2014 and 2015. In this case too, the figures issued by the European Commission are more optimistic than those previously published by Euroconstruct, which only expects the market to start its recovery in 2015.

Last year the **Slovenian** economy, due to difficulties in obtaining loans and a fall in domestic demand, recorded a further drop of 1.1%, and for 2014 the European Commission estimates indicate a variation of around +0.8%.

In the last four years, the value of investments in construction work has fallen by almost 50%, and the period of recession will continue for at least the rest of this year, with an estimated fall of about 3%.

Forecasts point to an increase in GDP for 2015 and 2016, more

**BUDAPEST**
The timid recovery of the **Hungarian economy** in 2013 was also reflected in the increase in investments in construction work.

**TALLINN**
In Estonia there should be a drop in construction market demand in 2014.

» FORECASTS POINT TO AN INCREASE IN SLOVENIA'S GDP FOR 2015 AND 2016

rapid economical growth on the international market, further stabilisation of the banking sector and fiscal consolidation.

Economic growth over the next two years will continue to rely on an increase in exports in particular, but for the first time since the start of the economic crisis, internal demand is expected to make a contribution, albeit modest, to growth.

On the basis of forecasts made by the European Commission, a recovery in the building market is not expected even in 2015, and the year will be characterised by a period of general stagnation in investments. There was a fall in investments in 2013 in all segments of the construction sector, particularly in the residential sector, where the decline is connected to a large surplus of apartments remaining unsold and a tightening of belts in the financial sector. The fall in investments in non-residential buildings is due mainly to a high level of corporate debt.

After four years of decline, building activity started to improve in the second half of 2013 and was significantly higher towards the end of the year, even though 2013 on the whole was even lower than in 2012. The improvement was mainly a result of an increase in civil engineering works together with intense activity in the infrastructure sector jointly financed by funds from the EU.

As far as the economic situation in **Croatia** is concerned, there are still no signs that the recession is coming to an end: GDP has fallen for five years in a row (1% in 2013), but even more worrying is the fact that Croatia, along with Greece, has the lowest GDP compared with pre-recession 2008 (the real value of GDP has fallen by 12%).

As far as the construction market is concerned, the negative trends have also continued in Croatia. In the month of January, the physical volume of construction work was 3.3% lower compared with December 2013 while, once again, on a yearly basis, there was a double-digit drop (-10.9% according to the calendar of corrected data). Again on a yearly basis, there was an even higher fall in the civil engineering and infrastructure sector (-14.5%) and in the residential building sector (-2.9%).

As far as the construction of new buildings is concerned (a sector that accounts for just 49.3% of the construction sector), forecasts indicate that there is a lack of investments aimed at re-launching the industry.

All this, together with the general rule that the project with the lowest tender price is usually the one awarded a public sector contract, leads to the use of cheaper materials and, as a result, a lowering of standards in terms of final quality.

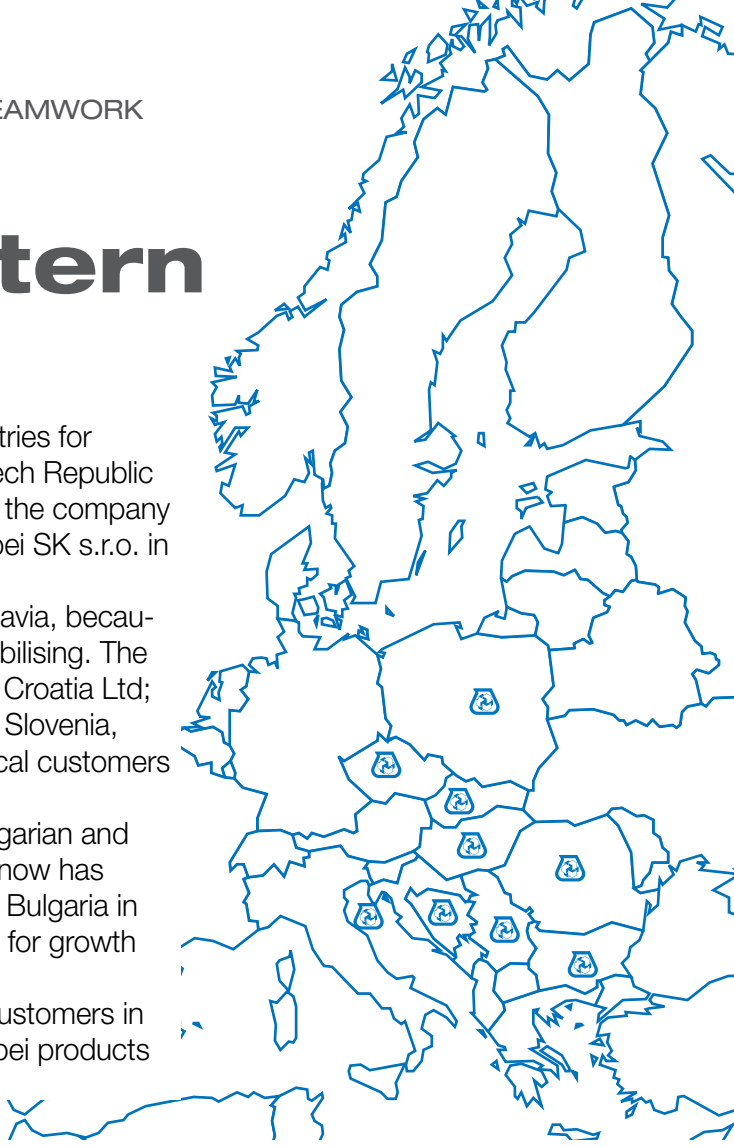
**Serbia** is one of the countries in the Eastern European area that has yet to become a member state of the European Union, but where Mapei has been operating for some time. Sector analysts forecast a recovery for 2014 in the construction market, even though the current situation doesn't seem to show any indication to back up this claim. Italy is one of the most important investors in the Serbian economy, and Mapei also acknowledges the strategic importance of Serbia in this part of Europe.

This article was written with the help of Francesco Doria, Mapei Market Research Manager

**PRAGUE**
After years of deep recession, investments in the Czech building industry in 2014 should be stagnant, leaving space in 2015 for an estimated growth of over 1%.

**BEOGRADE**
Serbia has yet to become a member state of the European Union. Sector analysts forecast a recovery for 2014 in the construction market.

# Mapei in Eastern Europe



Mapei has been operating in Eastern European countries for over 20 years. After setting up subsidiaries in the Czech Republic (Mapei spol. s.r.o.) and Hungary (Mapei Kft.) in 1991, the company established Mapei Polska in Poland in 2000 and Mapei SK s.r.o. in Slovakia in 2001.
It then spread to nations in what was formerly Yugoslavia, because the political situation in the zone was gradually stabilising. The Group has opened subsidiaries (Mapei d.o.o., Mapei Croatia Ltd; Mapei SRB d.o.o.), distribution centres and offices in Slovenia, Croatia and Serbia, which it uses to rapidly supply local customers with cutting-edge building products.
At the same time it also began breaking onto the Bulgarian and Romanian markets by creating Mapei Romania (that now has its manufacturing factory in Ruse) in 2007 and Mapei Bulgaria in 2009, in order to take advantage of the opportunities for growth offered by these countries.
The company can now boast a growing number of customers in these nations, who appreciate the high quality of Mapei products and technical assistance.

**SLOVENIA**

**Country:** Slovenia
**Founded in:** 1998
**Headquarters and offices:** in Grosuplje
**Distribution centre:** in Grosuplje
**Employees:** 18

## Mapei d.o.o.

**Mapei d.o.o.** was established 16 years ago and was the first Mapei subsidiary in former Yugoslavia. In actual fact the project and preparations for the creation of this new company began much earlier when Robert Pozar, currently the General Manager of Mapei d.o.o., visited the Group's head offices in Milan in 1990, which marked the start of a lengthy working partnership. As soon as the political situation in Slovenia settled down, Mapei began to really break into this nation at a rapid rate. After initially receiving considerable support from the mother company, the Slovenian subsidiary gradually has become more independent and well-established. The subsidiary's offices are located in Grosuplje in the central region of the country. A distribution centre was created there in 2004, which certainly helped boost sales of Mapei's various lines of products. The facility also supplies customers in Bosnia and Herzegovina, Montenegro, Kosovo and, until not very long ago, Serbia.
Thanks to the synergy resulting from working partnerships with local Slovenian technicians and building experts, the Mapei d.o.o. team has been involved in the construction of important architectural projects and in setting up a well-established network of business relations with real-estate groups, architects, construction companies and local distributors.
In the beginning Mapei d.o.o.'s operations were confined to the sale of products for installing ceramics, but the company can now also supply products for underground construction work, renovating historical buildings, repairing concrete, waterproofing and constructing industrial floors. Thanks to these solid foundations, Mapei d.o.o. is now ready to take advantage of all the opportunities offered by a market, which, despite its ups and downs, is a really interesting challenge for the Group.

**IN THE PHOTOS.** Mapei d.o.o.'s headquarters and distribution centre in Grosuplje.

CROATIA

# Mapei Croatia Ltd

**Country:** Croatia
**Founded:** in 2007
**Headquarters and offices:** in Kerestinec
**Employees:** 23

Mapei began operating in Croatia in 2002. Now the subsidiary, which only employed 2 members of staff in the beginning, has 23 employees and with 500 customers can claim to be the leading building chemistry company on the Croatian market.

**Mapei Croatia Ltd** was first established in 2007 and then a logistics centre was opened in Kerestinec, near Zagreb, in 2009: events that really helped Mapei break onto the Croatian market and boost its sales.

Staff at Mapei Croatia Ltd work in the technical assistance, sales, marketing, logistics, administration and accounts departments. There is also a team of agents and technicians working all over the country on a daily basis in direct contact with professionals working in the construction industry, providing them with all the support they require. Mapei Croatia technicians regularly attend seminars, customer presentations and professional training courses.

Despite the negative trend on the local building market, Mapei Croatia has grown constantly to acquire increasingly larger slices of the market. This is partly thanks to the strong bonds between the subsidiary and leading players in the industry, the support provided by the mother company, and the possibility of being able to count on technologically cutting-edge products. For these reasons, in the space of 12 years Mapei Croatia has progressed from just supplying products for installing ceramics and natural stone to meeting all kinds of requirements for every kind of building operations all over the country. And these solid foundations certainly augur well for future growth.

**IN THE PHOTOS.** Mapei Croatia's main offices in Kerestinec, near Zagreb.

SERBIA

# Mapei SRB d.o.o.

**Country:** Serbia
**Founded:** in 2013
**Distribution centre:** in Leštane
**Headquarters and offices:** in Leštane
**Employees:** 13

2013 was an extremely important year for the Serbian construction industry: after operating in Serbia for 9 years through a business office managed by its Slovenian subsidiary (Mapei d.o.o.), Mapei decided to establish a new company, **Mapei SRB d.o.o.**, which officially began operating on 20th May, 2013.

The new subsidiary has offices and a distribution centre to ensure operations run smoothly in Serbia. The decision to invest, most notably in a distribution centre, can be explained by the rise in demand for innovative building products for Serbian distributors and other professionals operating in the industry. Mapei SRB's sales and marketing strategy focuses on maintaining and improving relations with its own distributors and finding new business partners, in order to supply the entire Serbian market. To achieve this, the strategy involves close business partnerships with engineering firms, architects and installation/waterproofing companies.

At the moment Mapei SRB supplies high-quality products for a wide range of operations to approximately 125 customers in the Northern and Western areas of the country, as well as the capital Belgrade.

The Serbian building market is expected to revive in 2014 and Mapei SRB d.o.o. intends to take full advantage of the opportunities provided by this growth, continuing to provide its own customers with excellent logistical support and constant technical assistance from the design stage right through to the actual use of building materials.

**IN THE PHOTOS.**
Mapei SRB d.o.o.'s distribution centre in Leštane and main offices.

ROMANIA

# Mapei Romania SRL

**Country:** Romania
**Founded:** in 2007
**Headquarters and offices:** in Bucharest
**Distribution centre:** in Brasov
**Employees:** 60

**Mapei Romania SRL** was established in 2007 to supply professional solutions and systems to companies involved in all kinds of building work throughout the nation. Thanks to the detailed technical documentation the subsidiary provides, Romanian customers can find concrete solutions to their problems and detailed information about all Mapei products.
From when it was originally established to the present day, the subsidiary has made a name for itself on the Romanian market for the quality of its materials and its business relations with distributors, architects, engineers, designers and other professionals, partly thanks to its efficient technical assistance service and numerous training courses available to both customers and staff.
Mapei's success in Romania is shown by all the numerous building projects carried out using Mapei products: from museums and airports to shopping malls and banks, from sports facilities, hotels, aquatic centres, bridges and viaducts to motorways, underground railway lines and hydroelectric power stations.
The subsidiary's sales operations are well supported by its marketing department that regularly organises training courses, seminars and demonstrations for distributors, installers, building companies and architects, as well as sponsoring conferences on the building industry and sports events.


**IN THE PHOTOS.** Mapei Romania's main offices in Bucharest (left) and distribution centre in Brasov (right), in the central area of the country.

BULGARIA

# Mapei Bulgaria E.O.O.D.

**Country:** Bulgaria
**Founded:** in 2009
**Manufacturing plant:** in Ruse
**Production:** 20 products, mainly belonging to the ceramic and stone materials line
**Headquarters and offices:** in Sofia
**Employees:** 50

**Mapei Bulgaria** was established in 2009 after Mapei bought the Orgachim manufacturing plant in Ruse, a town close to the border with Romania. Operations then began on manufacturing systems for installing ceramics and stone products for the Bulgarian and Romanian markets. In the beginning the plant only produced 4 products but now it manufactures about 20.
As well as constantly investing in its production plant in Ruse, Mapei Bulgaria now has offices in Sofia and a storage facility to cater for the requirements of its Bulgarian clients and to help it expand onto the Macedonian market, where a Mapei area sales manager is already operating. At the moment the subsidiary has about 45 customers and 50 members of staff, including 3 area managers, 4 agents and 5 technical assistants.
During its first years in operation, Mapei Bulgaria's marketing work mainly focused on taking part in trade fairs, special events, technical seminars etc. As of 2014 greater attention is being given to retailers, a realm in which the company plans to increase its sales, bearing in mind the fact that the Bulgarian economy is not exactly booming at the moment.
Today Mapei Bulgaria can boast using the Group's products on such prestigious building projects as the underground railway line in Sofia and 90% of the biggest shopping malls built in the country over the last 5 years.


**IN THE PHOTOS.** Mapei Bulgaria's manufacturing plant in Ruse and main offices in Sofia.

# Kerapoxy CQ

## The **bacteriostatic**, high-performance, multifunctional, easy-to-use epoxy grout.


**Available in 21 colours!**



Easy-to-use, easy-to-clean, anti-acid, bacteriostatic, two-component **epoxy filler**, with BioBlock® technology, ideal for grouting the joints of ceramic tiles and mosaics.

- **Bacteriostatic grout with Mapei BioBlock® technology**: this grout avoids the formation of micro-organisms and moulds on the joints' surface, making the tiled surfaces hygienic and healthy, as certified by the University of Modena (Italy) according to **ISO 22196:2007** standard.
- **The BioBlock® technology** blocks the formation and growth of micro-organism in damp environments.
- **Emicode EC1 Plus-certified**: with very low emission level of volatile organic compounds (VOC) - Plus.
- Ideal for grouting floor joints in industrial, commercial, residential environments as well as in swimming pools.
- It allows the building of ceramic surfaces complying with the **HACCP** systems and meets the requirements set by **CE 852/2004** regulations concerning the hygiene of food products.

R2 EN 12004 · RG EN 13888 · CE EN 12004 · GEV-EMICODE EC1 PLUS very low emission

Product info

/mapeispa

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ADHESIVES · SEALANTS · CHEMICAL PRODUCTS FOR BUILDING

# Hilandar Monastery on Mount Athos

## Reconstruction of a Serbian Orthodox monastery damaged by a fire

**ABOVE.** A view of the Hilandar monastery on Mount Athos.
**BELOW.** The monastery's church is one of the most beautiful on the whole Mount Athos.

The Hilandar monastery is located on the easternmost of the three fingers of the Halkidiki Peninsula on Mount Athos (also called "Holy Mountain") in Greece. The Holy Mountain can boast twenty monasteries: 17 of them belong to the Greek Orthodox Church, one is Russian, one is Bulgarian and one is Serbian. Mount Athos belongs to Greece but the Hilander monastery was the cradle of Serbian Orthodox Church and perfectly mirrors the Serbian medieval culture. It was established by a Greek monk called Georgios Chelandarios and was restored by Stefan Nemanja and his son Sava in 1198. Stefan Nemanja was the founder of the Nemanjić dynasty ruling on Serbia during its "golden age", from the early 12th century to the mid-14th century.

**Restoration of the Hilandar monastery**

The complex encloses impressive towers, entrance walls with religious paintings, a church, a treasury, a library and a 14th century refectory. The Hilandar monastery is listed as one of the UNESCO World Heritage sites and hosts precious paintings, sacred objects and ancient icons. The only way to enter the monastery is from the north or the sea. The main church is one of the most beautiful

ones in the whole Mount Athos. It has been completely preserved in its original Byzantine style. The water spring and Saint Simeon's vine, famous for its healing properties, are situated next to the church's walls. The treasury and the library are located on the eastern side of the monastery.

They are decorated with 12th-century mosaics and hosts many valuable icons from the 13th century. The monastery's refectory, which still serves meals for both the monks and the guests, was built in the 14th century. Its walls are completely covered with ancient paintings. The complex had already suffered fire damages in 1722. On March 4, 2004, a major fire swept through the monastery and destroyed about half of its structures. The medieval art pieces and sacred objects that make up the treasures of the monastery were moved to safety, but the abbot's cell, the guest rooms and four chapels with 17th and 18th century frescoes were badly damaged. Assessment of the damages and restoration works began shortly after the fire.

**Many systems for one intervention**

Good cooperation among the teams of restoration experts, architects and Mapei technicians allowed the use of the most suitable technologies and materials for properly renovating such a valuable and delicate complex.

The foundations

One of the first issues which needed to be addressed was casting proper concrete when relocating the foundations to a lower point at the entrance of the complex. After a careful analysis, Mapei technicians proposed the use of MAPECRETE SYSTEM, the revolutionary system for the construction of large concrete structures without contraction joints. The system encloses the use of superplasticizers of the DYNAMON line, EXPANCRETE expansive admixture and MAPECURE SRA 25 curing liquid admixture. EXPANCRETE admixture was used to compensates for the concrete's shrinkage. By adding the admixture, the shrinkage is reduced by one half compared to concrete with superplasticizers only. The concrete works were completed with MAPEFILL fluid expansive mortar, applied on steel structural elements under the load-bearing columns.

The walls in the *parakklession*

Byzantine churches usually enclose three main areas: the entrance, the main body with the altar and the side chapel or *pareklession*. For the restoration works on the fresco paintings in the side chapels (*parakklession*) of

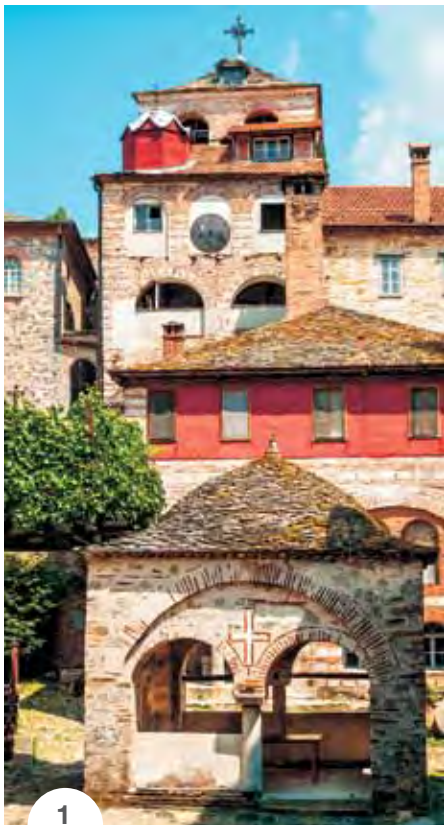

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**PHOTO 1.** The water spring and healing vine in the monastery.
**PHOTO 2.** The refectory dates back to the 14th century.
**PHOTO 3.** The monastery's library.
**PHOTO 4.** On March 4, 2004, a major fire swept through the monastery and destroyed about half of its structures.

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**PHOTO 5.** A map of the monastery showing the sections destroyed by fire.
**PHOTO 6.** A view of the monastery's inside areas.
**PHOTOS 7, 8, 9.** MAPE-ANTIQUE F21 was used for repair works into the paraklession of Saint Stefan and for the Chapel of Saint John of Rila in some areas surrounding the frescos.

Saint Nicholas, Saint John of Rila and Holy Trinity in the Hilander monastery Mapei proposed the use of MAPE-ANTIQUE F21 super-fluid, salt-resistant, hydraulic binder with fillers made from lime and Eco-Pozzolan and applied by injection for consolidating masonry and render, including the frescoed ones. The application of MAPE-ANTIQUE F21 by injection helped the restoration and consolidation of the frescos' substrates. Architects and experts from the Institute for Protection of Cultural Monuments of the Republic of Serbia have recognized the quality of this product, which has been widely used for the restoration of other frescos afterwards. The walls of Saint George *parakklession*, the Tower of Saint George and the frescoes from the era before the time of Saint Sava were also repaired using MAPE-ANTIQUE F21. In this case, the *parakklession* walls contained wooden beams which have been destroyed by fire. Stainless steel profile brackets were installed in these areas. The entire brick-built structure was then injected with MAPE-ANTIQUE F21.

Grouting joints

In the areas where ceramic tiles or stones were used as the covering layer grouting operations were carried out with ULTRACOLOR PLUS mortar in suitable colour shades. The product was used for the joints in the toilets, hallways, public areas, reception hall and other areas. ULTRACOLOR PLUS is a high-performance, anti-efflorescence, quick-setting and drying polymer-modified mortar, ideal for grouting joints from 2 to 20 mm wide. KERAPOXY two-component anti-acid epoxy grout was used in the infirmary. This product is available in 26 colours, and is especially suitable in environments where hygiene and high mechanical resistance to acids are required.

Waterproofing

The monastery also hosts an ancient stone

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tank which had lost its watertight properties. Waterproofing works were therefore planned to bring it back to its original state. The tank is located in the southern section of the monastery and was used to store drinking water. Since the tank's substrate was extremely prone to crumbling, Mapei's technicians suggested to use PRIMER 3296 consolidating and anti-dust acrylic primer in water dispersion before applying the waterproofing treatment. All cavities and uneven spots were treated with PLANITOP 400 quick-setting, controlled-shrinkage thixotropic mortar. The joints between vertical and horizontal surfaces were filled with a mixture of quartz, cement and IDROSILEX LIQUID waterproofer.

The remaining sections of the tank were waterproofed with IDROSILEX PRONTO osmotic cementitious mortar. The product was tested and its safety for human health was confirmed. As the storage capacity of this tank is limited, it could not be used for fire-fighting purposes. Following the Greek and Serbian authorities' request, a new water tank with capacity of 440 $m^3$ was built. Mapei proposed a solution for waterproofing this

**PHOTO 10.** ULTRACOLOR PLUS was used for grouting tiles' and stone slabs' joints.
**PHOTO 11.** The new fire fighting water tank was waterproofed with MAPELASTIC.

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## IN THE SPOTLIGHT

**MAPE-ANTIQUE F21**

It is a cement-free hydraulic binder in powder form for injection slurries made from lime, Eco-Pozzolan, natural ultra-fine sand and special water-retention additives.
It is ideal for consolidating foundations, pillars, vaulted roofs, archways, "cement-core" walls and stone, brick, tuff and mixed masonry in general on old buildings, masonry with the presence of capillary rising damp and soluble salts, structures with murals, renders detached from the substrate, etc.

**ABOVE.** An outside view of the Hilander monastery.

tank. MAPEFER two-component, anti-corrosion cementitious mortar was applied on the exposed reinforcement rods to prevent rust and to restore their alkaline properties. The reinforcement rods were cleaned and two layers of MAPEFER were applied. The remaining works are expected to be completed using MAPELASTIC waterproofing mortar, ensuring a high-performance, flexible, waterproofing coating.

**Restoration works are still on-going**

Restoration works at the Hilandar monastery have not been completed. This year marks the 10th anniversary of the fire that caused huge damages to the complex. The official estimated total cost of the reconstruction is 25 million Euros, with 17.7 million Euros for the part which was directly affected by the fire.

Further reconstruction of the monastery largely depends on the willingness of the local and worldwide community to restore and preserve this unique monument. Restoration works are expected to be completed by the end of 2014.

This article has been taken from *Mapei Svet* No. 13, the in-house magazine published by Mapei SRB d.o.o., whom we would like to thank.

## Technical Data

**Hilandar Monastery,** Mount Athos, Greece
**Period of Construction:** 12th century
**Period of the Intervention:** 2005-on-going
**Intervention by Mapei:** supplying products for repairing concrete structures, repairing old walls painted with frescos, building foundations, waterproofing water tanks, grouting joints
**Project Design and Works Direction:** Milivoj Randjic (Hilandar Foundation), Mirko Kovačević, Slobodan Barišić (Institute for the Protection of Cultural Monuments of the Republic of Serbia), Nenad Šekularac, Dragomir Krivokuća and Stevica Tripković
**Client:** Hilandar Foundation, Belgrade
**Contractor:** KeDAK, Centre for Protection of Mount Athos Heritage
**Mapei Co-ordinators:** Melanija Pavlović, Vladimir Dimitrijević and Nebojša Janić, Mapei SRB d.o.o. (Republic of Serbia)

## Mapei Products

Preparation of concrete: Expancrete, Mapefill
Waterproofing: Idrosilex Liquid, Idrosilex Pronto, Mapelastic, Mapefer, Primer 3296, Planitop 400
Grouting joints: Kerapoxy, Ultracolor Plus
Consolidating masonry: Mape-Antique F21

**For further information see www.mapei.com and www.mapei.rs**



# *Mape-Antique line*

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To meet your projects' requirements, Mapei offers a complete range of products for restoring, repairing and rendering in an eco-sustainable way. Mape-Antique products contribute to the well-being of both existing and new constructions.

Product info

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ADHESIVES · SEALANTS · CHEMICAL PRODUCTS FOR BUILDING

# Ultracoat.

## The **first choice** to **protect parquet.**

## Parquet **professionals** choose the quality and results that only **MAPEI products** can offer.

From the Mapei R&D laboratories, following our systems for installing wood, we now present the **Ultracoat Systems** to protect parquet.

- Products that **respect** man and the environment
- Products that are **solvent-free**
- Water-based systems for **simple application**
- **Rapid** systems to protect parquet
- Water-based systems offering high and **ultra-high protection** against wear to parquet
- Water-based systems in **reaction to fire** classes **Cfl s1** and **Bfl s1**
- Products **certified EC1**

Product info

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# Valamar Dubrovnik President Hotel

## The Ultracoat product line was used for finishing the wooden floors in 294 rooms

Located in front of the sea, in the wonderful Babin Kuk peninsula, the Valamar Dubrovnik President Hotel offers its guests superior accommodation, a wellness centre, an outdoor pool, a sun deck, a renovated beach and exquisite restaurants. It is 6 km far from the old town's centre of Dubrovnik, a Croatian city on the Adriatic Sea which is also a UNESCO World Heritage site.

In 2013 the hotel was renovated to ensure maximum comfort for guests and to win the 5 stars classification. Works also included the finishing of high quality teak wooden floors in its suites and rooms.

### Ultrafast, ultra resistant, Ultracoat

The client's requirement was to renew the floors quickly, in time for the forthcoming tourist season. The products used for finishing the wooden floors had to be high-quality and long-lasting considering the high number of tourists staying in the hotel during each year's summer season. For this purposes, a Mapei system was chosen, consisting of one coat of ULTRACOAT PREMIUM BASE basecoat and one finishing layer of ULTRACOAT HIGH TRAFFIC varnish.

The floors were fist sanded with coarse sandpaper to remove all traces of scratches and

**ABOVE.** A view of the Valamar Dubrovnik President Hotel, where Mapei products were used to finish teak wooden floors in the suites and rooms.

## IN THE SPOTLIGHT

**ULTRACOAT HIGH TRAFFIC**

It is a two-component, waterbased varnish formulated with 100% aliphatic (nonyellowing) polyurethane resins, characterised by an excellent level of resistance to abrasion and scuff marks from rubber-soled shoes.
It is used for finishing solid and pre-sanded wooden floors and wooden floors requiring repair. It is especially suitable for use in civil and commercial environments, including those subject to extremely high foot traffic.
It also gives wooden floors an attractive "natural wood" finish.
If applied directly without a base product, it considerably enhances the colour of the wooden floor and does not yellow over the years.
It can contribute up to **3 points** to obtain the **LEED** certification.


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dirt, as well as to smooth the surface. The surfaces were then carefully vacuumed and sanded with finer, sandpaper. Prior to finishing, the wooden floors were buffed with a rotational sanding machine to also achieve the aesthetically perfect finish. The areas were thoroughly vacuumed to avoid dust impact on fresh varnish.
The wooden floors were then treated with ULTRACOAT PREMIUM BASE two-component, NMP(N-Methylpyrrolidone)-free, water-based basecoat with high insulating capacity and very low emission level of volatile organic compounds (VOC). ULTRACOAT PREMIUM BASE does not cause undesired colour variations in parquets rich in tannins or other extracts, such as oak or teak, as was the case of the wooden floors in the Valamar Dubrovnik President Hotel. The product was applied using ULTRACOAT ROLLER PLUS, a special long-haired roller (6 mm).
The two-layer cycle requires 12 hours of drying time for the basecoat prior to buffing and varnishing. Thereafter, the floors were buffed with ULTRACOAT SR 150 disks. The final treatment was done by applying ULTRACOAT HIGH TRAFFIC two-component, NMP-free, water-based, polyurethane varnish with an extremely low emission level of VOC. It was easily applied with ULTRACOAT ROLLER FINISH, a special medium-haired (4 mm) roller.
ULTRACOAT HIGH TRAFFIC is an aliphatic varnish, characterised by an excellent level of resistance to abrasion and scuff marks. Floors treated with this varnish have a natural, even finish and their cleanability is very similar to

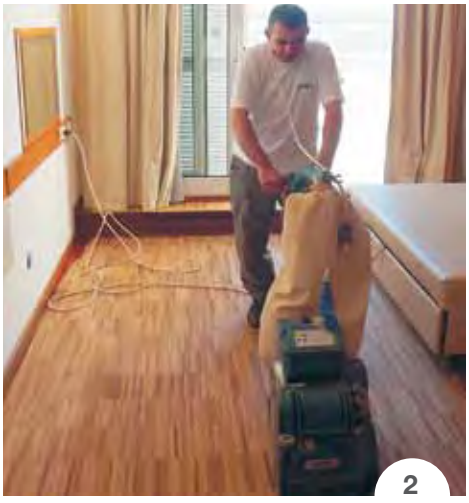
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**PHOTO 1.** A room at the Valamar Dubrovnik President Hotel after completion of the works
**PHOTO 2.** Buffing the wooden floors.
**PHOTO 3.** Applying ULTRACOAT PREMIUM BASE basecoat.
**PHOTO 4.** Applying ULTRACOAT HIGH TRAFFIC varnish.
**PHOTOS 5, 6, 7.** Some indoor and outdoor views of the hotel.

that of impregnation cycles with oil and wax. From this year on, the guests of the Valamar Dubrovnik President Hotel can enjoy the magnificent view of the Mediterranean Sea and coast and the comfort of their accommodation in the refurbished rooms and suites. The extraordinary attractive floors and the extremely low emission level of volatile organic compounds of the ULTRACOAT system for floor protection guarantee an enjoyable stay in the areas where these unharmful products were applied. The wooden floors treated with ULTRACOAT products received a "presidential" treatment, gaining durability and high resistance to wear and abrasion for many years.

This article has been taken from *Mapei Svijet* No.27, the in-house magazine published by Mapei Croatia, whom we would like to thank.

## Technical Data

**Valamar Dubrovnik President Hotel**, Dubrovnik (Croatia)
**Period of Construction:** 2013-2014
**Year of the Intervention:** 2013
**Intervention by Mapei:** finishing the teak wooden floorings

**Client:** Riviera Adria d.d., Branch for tourism Dubrovnik-Babin Kuk
**Company in charge of finishing the wooden floor:** Čulina, Dubrovnik
**Mapei Co-ordinator:** Nenad Karalija, Mapei Croatia d.o.o.

## Mapei Products

Finishing the wooden floors: Ultracoat Premium Base, Ultracoat High Traffic, Ultracoat Roller Finish, Ultracoat Roller Plus, Ultracoat SR 150
**For more information see www.mapei.com and www.mapei.hr**

# Valea lui Stan: a repaired viaduct

Repair, consolidation and protection of a Romanian viaduct along the famous Transfagarasan road

The construction of the Vidraru dam and its hydropower station started in 1961 in Romania. This huge structure, which at that time was the fifth biggest arch dam in Europe, was inaugurated after only 5 years, in 1966. The costs of this construction amounted to 1.4 billion Romanian New Leu, and today this kind of building would cost about 450 billion Euros. In 1970, the construction of the famous Transfagarasan (DN7C) road began, a road crossing the Fagaras mountains in Southern Romania and the Vidraru dam in some points. This 92 km long road was completed after only 4 years. It is along the Transfagarasan road that the Valea lui Stan viaduct was built between 1968 and 1969.

**The viaduct's damages**

The 42-year-old viaduct was lately renovated using the best Mapei products for concrete repair, since the fast pace of construction works and the poor quality of the materials available at that time resulted in many damages, some of them superficial, others having a negative influence even from the structural point of view. For instance, when joining the support elements with the bridge arch, the concrete was not vibrated properly, which caused deterioration. The reinforcement was corroded and here and there even featured mass loss. The most evident damages were to be found at the bottom of the first pier S1, the most external one at the end of the arch. The concrete at the column base was fully destroyed, the pier

bearing capacity to take over the decompression stresses was seriously affected, which led to the redistribution of additional stresses in the whole structure.

This relevant structural flaw influenced the whole structure. Along the running path, in the junction area of the abutments and cells, the transposition of cracks could be noticed at the level of the bitumen. The rigid deck, made up of a continuous box girder, showed some cracks.

Besides, the concrete was degraded by the aggressive action of the atmospheric chemical agents, first of all the combined action of carbon dioxide ($CO_2$) with water infiltrations.

The oxidation process of the reinforcing rods caused their volume growth. This expansive process induced mechanical stresses in the covering layer of the reinforcements, leading first to its cracking and the acceleration of the degradation. The covering layer of the reinforcements was later flaking, the reinforcements were strongly corroded and were losing their mass.

Following a professional technical survey, the repair intervention was elaborated with the joint effort of the designer and Mapei Romania's Technical Services Department. The intervention included three phases and Mapei was directly involved in the performance of the former two.

## Structural consolidation with special products

The measures for structural consolidation focused on the S1 pier, whose base was strongly deteriorated as the concrete was missing on most of the pier's surface.

The rust was removed from the reinforcing rods by hydro-sandblasting to prevent vibrations and additional degradation to the structure. The reinforcing rods were treated with MAPEFER 1K one-component, anti-corrosion cementitious mortar, which also worked as a bonding promoter for the following layers.

The concrete repair work began by casting MAPEGROUT HI-FLOW fibre-reinforced, shrinkage-compensated mortar with mechanical properties similar to the ones of concrete, meeting the minimum requirements defined by EN 1504-3 European standard for structural mortars of class R4. This mortar, which featured a proper grain size, is based on highly resistant cements, selected aggregates, special additives and synthetic fibres.

The surfaces were then treated with MAPEWRAP PRIMER 1 two-component epoxy primer and levelled using MAPEWRAP 12 two-component, slow-setting, thixotropic epoxy grout. Bundles of MAPEWRAP S FIOCCO, carbon fibre cords were applied to ensure the structural connection of the two elements (the support cell and the foundation). MAPEWRAP S FIOCCO cords were fixed with EPOJET two-component, super-fluid epoxy resin.

## Cutting-edge carbon fibres

The most important stage of the intervention of consolidation began with the application of the carbon fibre fabric. The first step was the impregnation of the surface with MAPEWRAP 31 two-component, medium-viscosity epoxy adhesive. The carbon fibre fabric was only applied after impregnation with MAPEWRAP 31.

The choice of the suitable type of carbon fibre fabric was determined by the fact that the consolidated section is actually a structural knot where all the range of loads is developed: axial, shearing strength, bending moment. MAPEWRAP C QUADRI-AX 760/48 quadri-directional carbon fibre fabric was chosen. This product is ideal for repairs and the static upgrade of reinforced concrete structures damaged by environmental or accidental aggression, where the distribution of isostatic lines of tension are unknown, as well as for the seismic strengthening and restoration of vaulted structures.

The bundles of steel fibres scattered and were

**PHOTO 1.** Before the repair works, along the viaduct cracks were evident even at the roadway level, due to movements of the structure below.
**PHOTO 2.** Before the repair, the reinforcement rods were strongly corroded and were losing their mass. They were treated with MAPEFER 1K one-component, anti-corrosion cementitious mortar.
**PHOTO 3.** The damaged concrete sections were repaired with MAPEGROUT HI-FLOW fibre-reinforced, shrinkage-compensated mortar.


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**PHOTO 4.** The concrete surfaces were treated with MAPEWRAP PRIMER 1 and levelled with MAPEWRAP 12 epoxy grout.
**PHOTO 5.** MAPEWRAP S FIOCCO cords were fixed with EPOJET two-component, super-fluid epoxy resin.
**PHOTO 6.** MAPEWRAP 31 two-component, medium-viscosity epoxy adhesive was used to impregnate the concrete surfaces.
**PHOTO 7.** Application of MAPEWRAP C QUADRI-AX 760/48 carbon fibre fabric.

bonded onto the carbon fibre fabric using MAPEWRAP 31 adhesive.

### Protecting the concrete structure against atmospheric agents

After the structural strengthening operations, the viaduct surfaces were repaired and protected in order to increase its durability.
Both the structure is geometry and the special location of the viaduct made these operations difficult. All the works were performed by professional climbers suspended with ropes.
The whole structure was first hydro-sandblasted to remove all the loose and deteriorated concrete parts. The reinforcement rods subject to the formation of rust were cleaned and treated with MAPEFER 1K. Local repair and reshaping operations were carried out with MAPEGROUT T60 fibre-reinforced, sulphate-resistant thixotropic mortar.
After the repairs, the whole structure was protected using MAPELASTIC SMART two-component, high-flexibility cementitious mortar, which provides high protection against the aggression of chemical agents. It was applied using special pumps. MAPELASTIC SMART was also chosen due to its ability to protect renders or concretes that show cracks due to shrinkage or small movements caused by thermal changes or dynamic loads generated by the vehicular traffic.
A flexible protection system was then applied,

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which ensured protection against UV rays and chemical aggressions and gave a pleasant decorative effect. The system included MALECH water-based acrylic undercoat and bonding promoter with a smooth finish and ELASTOCOLOR PAINT elastomeric, crack-bridging, permanently flexible, protective paint. The system was fully applied with a special pump.

Due to both the joint effort of the involved parties and Mapei's technologically advanced products, the Valea lui Stan viaduct's repair was completed after about 2 month of hard work. It can now safely ensure smooth traffic along one of the most picturesque roads in Romania.

## IN THE SPOTLIGHT

**MAPELASTIC SMART**

It is a two-component mortar based on cementitious binders, fine-grained selected aggregates, special additives and synthetic polymers in water dispersion. It may be applied by brush, by roller or by spraying. MAPELASTIC SMART is used to protect concrete structures, renders with hairline cracks and cementitious surfaces in general, and for waterproofing hydraulic projects such as channels, faces of dams and swimming pools, basins, storage tanks, balconies and terraces. It can contribute up to **3 points** to obtain the **LEED** certification for eco-sustainable buildings.


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**PHOTO 8.** The whole structure was hydro-sandblasted to remove all the loose and deteriorated concrete parts before carrying out the waterproofing and protective operations.
**PHOTO 9.** MAPELASTIC SMART was applied on the viaduct's concrete surfaces by professional climbers suspended with ropes and using special pumps.
**PHOTO 10.** The final protective treatment included the application of MALECH and ELASTOCOLOR PAINT.

## Technical Data

**Valea lui Stan viaduct,** Argeș, Romania
**Period of Construction:** 1968-1969
**Period of the Intervention:** September-November 2011
**Intervention by Mapei:** supplying products for structural strengthening, concrete repair, waterproofing and finishing
**Project:** CONSITRANS SRL, Dr. Ing. Popa Victor
**Customer:** SC HIDROELECTRICA SA
**Contractor:** HIDROCONSTRUCTIA SA, SUCURSALA ARGES
**Mapei Co-ordinator:** Ing. Cartas Constantin, Mapei Romania

## Mapei Products

Repairing concrete and treating reinforcement rods: Mapefer 1K, Mapegrout Hi-Flow, Mapegrout T60
Structural strengthening: MapeWrap 12, MapeWrap 31, MapeWrap S Fiocco, MapeWrap C Quadri-AX, MapeWrap Primer 1
Waterproofing and finishing: Mapelastic Smart, Elastocolor Paint

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RESERVED

**IN THE FACING PAGE.** Mapei products ensured a professional installation of high quality ceramic tiles and stone materials on the floors of common areas in the Paradise Center complex.
**ABOVE.** In the "water mirror", a large fountain with water features located inside the complex, KERAFLEX MAXI S1 was used to lay natural stone slabs on substrates waterproofed with MAPELASTIC.

# Paradise Center in Sofia

## The most advanced installation systems for the biggest shopping mall in Bulgaria

Since its official opening on March 28th, 2013, Paradise Center has been marking the lifestyle of the Bulgarian capital as the most attractive place for shopping and entertainment, featuring impressive architecture and interior design.
Paradise Center mirrors the real nature of Sofia: dynamic, fashionable, green, expanding and treasuring up the coziness of the traditional urban style. It is also the largest project of this kind in Bulgaria and one of the most unique mall structures in Europe. The underlying concept is the synergy between man and nature, embedded both in the project's logo and in every detail of the building.
The mall sets a new standard in the way Bulgarian people spend their leisure time thanks to the wide range of services and entertainments available for all ages: from the sports areas, the restaurants and cafés, through the children's centers, the attractions and cinemas, to the huge and modern events hall.


### IN THE SPOTLIGHT

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


**ABOVE.** KERAFLEX MAXI S1 high-performance, deformable cementitious adhesive was used for the installation of porcelain tiles in all common areas of the building.

## Technical Data

**Paradise Mall**, Sofia (Bulgaria)
**Project:** RTKL Associates Inc., ProArch AD, Planning EOOD
**Period of Construction:** 2010-2013
**Period of Intervention:** 2010-2013
**Intervention by Mapei:** preparing and smoothing floor substrates; installing porcelain tiles and stone slabs in indoor areas; waterproofing the indoor and outdoor fountains' surfaces; laying ceramic mosaics in the fountains; grouting joints
**Client:** BULFELD EOOD
**Contractor:** Comfort OOD.
**Mapei Distributors:** Dobrich Stroy, Nitera, Factor Trade
**Laying Company:** Comfort Varna OOD
**Mapei Co-ordinator:** Georgi Trifonov, Mapei Bulgaria

## Mapei Products

Preparing and waterproofing the substrates: Eporip, Topcem, Mapelastic, Planitop Fast 330
Laying mosaics in the fountains: Adesilex P9
Laying stone materials and porcelain tiles: Keraflex Maxi S1
Grouting the joints: Ultracolor Plus

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The underground parking area includes two levels and has two entrances and two exits, providing nearly 2,000 parking lots.
Besides the impressive volumes, the sense of luxury and high standard was achieved thanks to the innovative high-quality materials used in the construction of the shopping center.

### The works in the indoor areas

KERAFLEX MAXI S1 high-performance deformable cementitious adhesive was used for the instal1lation of porcelain tiles in all common areas of the building. This product features no vertical slip, extended open time and Low Dust technology, and is classified as C2TE S1 according to EN 12004 standard. The tile joints were grouted with ULTRACOLOR PLUS high-performance, anti-efflorescence, quick-setting and drying polymer-modified mortar with water-repellent DropEffect® and mould-resistant BioBlock® technology for joints from 2 to 20 mm wide.
The ceramic tiles in one of the shops were bonded with ADESILEX P9 high-performance cementitious adhesive, classified as C2TE according to EN 12004. The size of the tiles ranged from 75x75 to 75x37.5 and 75x150. The joints were grouted with ULTRACOLOR PLUS.

KERAFLEX MAXI S1 was also used to lay natural stone slabs in one of the attractions of the Paradise Center: the "water mirror", a large fountain with water features located in the middle of the complex. Before the stone installation, the substrates were waterproofed with MAPELASTIC two-component, flexible cementitious mortar, which is ideal for waterproofing balconies, terraces, bathrooms and swimming pools.
TOPCEM special normal-setting, quick-drying, controlled-shrinkage hydraulic binder was used for building the floor screeds in the offices.
In the toilets and other wet areas, substrates were waterproofed with MAPELASTIC. To improve its flexibility, MAPELASTIC was reinforced with MAPENET 150 alkali-resistant glass fibre mesh. MAPEBAND alkali-resistant rubber tape was used to waterproof the corners and areas around the drains. Before the application of MAPELASTIC, the substrates were treated with PRIMER G synthetic resin primer in water dispersion with a very low emission level of volatile organic compounds (VOC).

### The works in the outdoor areas

60x60 cm natural stone slabs were also bonded on the outdoor stairs of the shopping center using KERAFLEX MAXI S1. The joints were again grouted with ULTRACOLOR PLUS.
Before installing the natural stone covering, the substrate was levelled with PLANITOP FAST 330 quick-setting, fibre-reinforced cementitious levelling mortar.

# Mapelastic

## The most popular elastic cementitious waterproofing product for more than 20 years


## Why choosing Mapelastic

- It is a safe, proven, durable system that has been used to waterproof more than 300 million square metres
- It offers permanent flexibility in all atmospheric conditions, particularly at low temperatures
- It may be applied on both new screeds and existing flooring without removing tiles
- It is certified according to the most severe international standards

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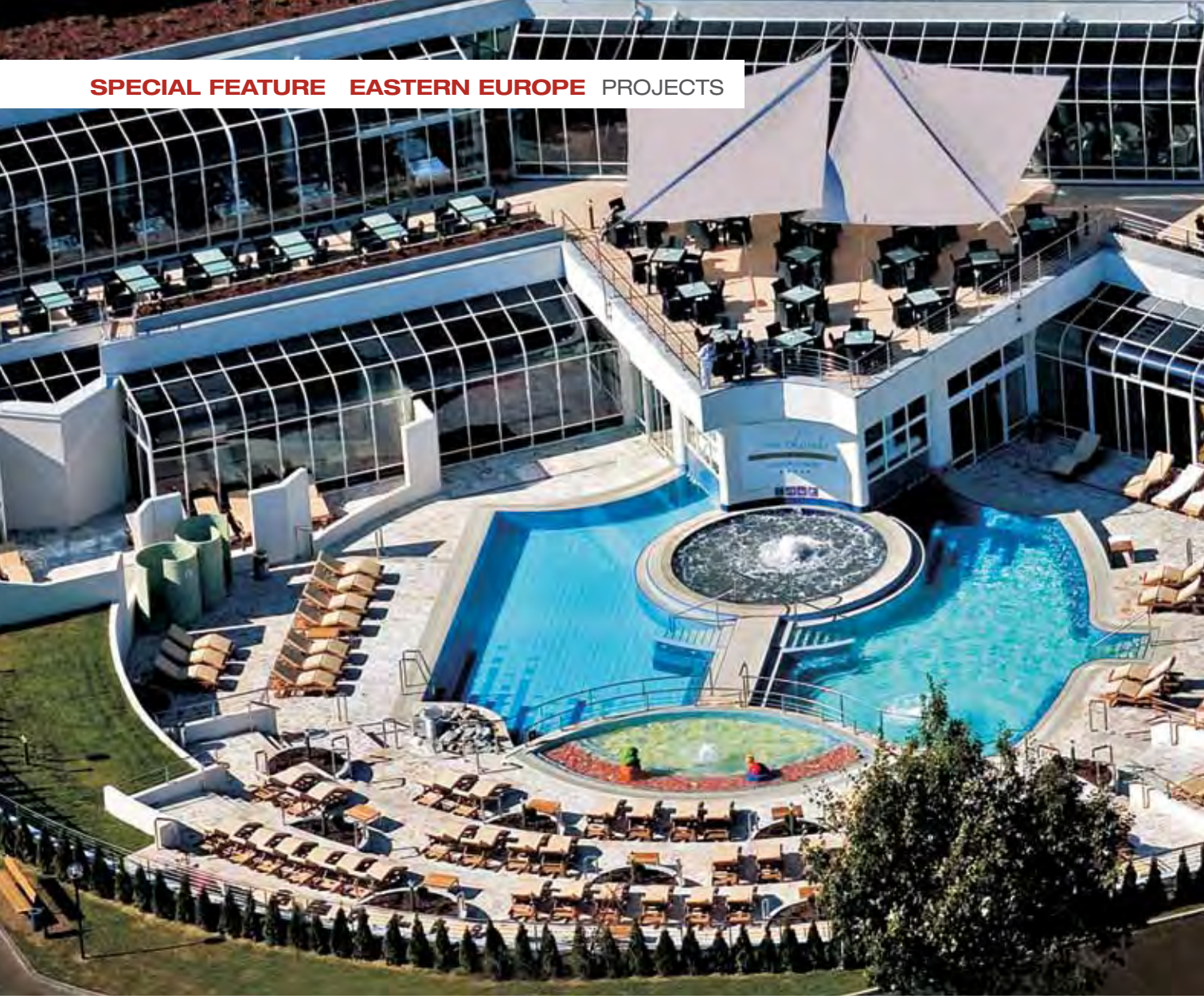

# Terme 3000 in Moravske Toplice Slovenia

## Renovation works on the floors of a spa centre in Slovenia were carried out with Mapei products

The development of spa activities in Moravske Toplice dates back to 1960 when, instead of petrol, thermal mineral water at a temperature of 72 °C was discovered, which has numerous beneficial effects on those suffering from rheumatic pains and problems with joints or limbs.

The Terme 3000 water park in Moravske Toplice is one of the largest of its kind in Slovenia and boasts numerous water attractions and features.

Mapei supplied products for two projects carried out at Terme 3000: renovation of the floorings around the pools and renovation of the terrace at the Livada Prestige Hotel.

### Renovation of the terrace at the Livada Prestige Hotel

The Livada Prestige Hotel was the first five-star hotel in Europe to offer treatment using the curative effects of raw thermo-mineral water directly in the rooms. In the summer of 2013, renovation work was carried out on the large terrace in the east wing of the hotel. It

**PHOTO 1.** The terrace's substrate was smoothed off with PLANITOP FAST 330 levelling mortar.
**PHOTO 2.** The waterproofing system included sealing the fillets between the walls and floor with MAPEBAND tape.
**PHOTO 3.** Applying MAPELASTIC system with MAPENET 150 alkali-resistant glass fibre reinforcing mesh.

proved to be a very complex job, as the patterns of the surface were quite complex and various technical solutions had to be found for the numerous construction details, such as structural joints, elements passing through the flooring for the railings and the drains, and guttering elements. Each specific problem required special attention to ensure the most appropriate products were chosen and that work was carried out according to specification.

**Substrate preparation**

On the terrace, the old ceramic tile floor was completely removed along with the adhesive and the waterproofing layer. The substrate was then blasted with high-pressure water jets to remove all the oil and grease stains and any detached materials.

To help the water flow away from the surface, the drains and guttering elements on the terrace were left in place and they were prepared for the waterproofing work to be carried out on them. The drainage system was bonded firmly to the substrate using ADESILEX PG1 two-component epoxy adhesive.

MAPEBAND TPE tape was used to form a flexible, waterproof seal for the structural joints by bonding it to the substrate with ADESILEX PG1. The function of the tape is to guarantee a flexible seal for structural joints, including those subject to movements. A layer of PLANITOP FAST 330 quick-setting cementitious levelling mortar was applied on some of the surfaces to create sufficient slope for water to run off towards the drainage points. This mortar, applied in layers from 3 to 30 mm thick, is used to even out the surface of substrates, and was chosen in this case because of its quick-hardening properties which allowed the waterproofing layer to be applied the following day.

On the old ceramic substrate (part of the terrace had two layers of ceramic covering but only the top layer was removed), ECO PRIM GRIP was applied before using PLANITOP FAST 330. ECO PRIM GRIP is a multi-purpose, ready-to-use bonding promoter made of synthetic acrylic resin and silica inerts. It is a ready-to-use product that needs no particular preparation and is particularly easy to apply with a roller or a brush. Thanks to the silica aggregates ECO PRIM GRIP guarantees a rough keying surface, ideal for renders, smoothing and levelling compounds, thus ensuring excellent bond on smooth substrates or substrates with low absorbency. Other products may be applied over it just 30 minutes after application.

The following day, therefore, it was already possible to apply MAPELASTIC waterproofing system. Two layers of MAPELASTIC



**PHOTO 4.** The porcelain tile floorings were bonded with KERAFLEX MAXI S1 adhesive.
**PHOTO 5.** The terrace upon completion of the renovation works.
**PHOTO 6**. PLANITOP FAST 330 cementitious mortar was used for small, localised repairs to the floor substrate.
**PHOTO 7.** The porcelain tiles were bonded on the stairs with KERAFLEX EASY adhesive.
**PHOTO 8.** KERAPOXY CQ two-component epoxy mortar was used to grout the tile joints on the floors.

two-component cementitious mortar were applied with MAPENET 150 alkali-resistant reinforcing mesh embedded at half thickness. The expansion joints and fillets between the horizontal and vertical surfaces were waterproofed with MAPEBAND tape. MAPEBAND SA self-adhesive butyl rubber waterproofing tape, used to waterproof fillets between vertical and horizontal surfaces on terraces and balconies and in bathrooms and showers, was applied between the floor and the cornices under the windows and between the floor and the supports for the railings to form a waterproof seal. MAPEBAND SA guarantees excellent adhesion for the next layer of the waterproofing system and bonds to various types of substrate, including non-absorbent substrates such as aluminium, copper and steel.

**Installation of the ceramic flooring**

The porcelain tile flooring was bonded with KERAFLEX MAXI S1, a high-performance cementitious adhesive with no vertical slip and extended open time for ceramic tiles.

The joints were grouted with ULTRACOLOR PLUS high performance, quick-drying and setting mortar for joints from 2 to 20 mm wide.

**Sealing the expansion joints**

All the expansion joints, the fillets between the horizontal and vertical surfaces and the other joints between the various elements were cleaned and treated with PRIMER AS one-component primer for absorbent surfaces and then sealed with MAPEFLEX PU45 one-component, rapid-hardening, thixotropic polyurethane sealant with a high modulus of elasticity.

**Renovation of the flooring around the swimming pools**

An important part of the project was the renovation work on the flooring around the swimming pools.
Ceramic tiles were bonded on the old concrete flooring. To prepare the substrate, the deteriorated and damaged concrete areas were completely removed so that the underlying reinforced concrete substrate was left exposed. The areas that were still well bonded were prepared by hydro-blasting them with high-pressure water jets to remove the oil and grease stains and any other material or substance that could affect adhesion to the substrate.
The cracks in the screed were repaired and sealed with EPORIP two-component epoxy resin for construction joints and monolithic seals of cracks in screeds.
Before applying EPORIP into the cracks, they were opened with a grinder to form a "V" shape and all the dust in and around the cracks was completely removed. Steel bars were inserted across the screeds. The cracks were filled with EPORIP and the surface was sprinkled over with silica sand.
PLANITOP FAST 330 mortar was again used to smooth the surface of the substrate and to form the slopes required before bonding the ceramic tiles and stone slabs.
The tiles were bonded with KERAFLEX EASY high performance, cementitious adhesive, specially suitable for bonding large-size porcelain tiles on large surfaces. KERAFLEX EASY has good back-buttering properties and guarantees excellent adhesion of ceramic tiles to substrates.
KERAPOXY CQ two-component, anti-acid epoxy mortar was used to grout the ceramic tile joints. This product is easy to apply and has excellent cleanability and, when it sets,

6

forms a smooth and compact, non-absorbent surface.
The installation company chose MAPEFLEX PU45 sealant in combination with PRIMER AS to seal the expansion joints. Before sealing the joints they were partially filled with MAPEFOAM closed-cell, extruded foam polyethylene cord to gauge the correct size of flexible joints.
All the work was carried out efficiently and on schedule. The recipe for success is very simple: make sure renovation work is well planned, work with an experienced, conscientious and professional team and carry out all work using high quality materials like the Mapei products.

7

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This article has been taken from issue No. 27 of *Svet Mapei*, the in-house magazine published by the Group's Slovenian subsidiary, Mapei d.o.o., whom we kindly thank.

## Technical Data

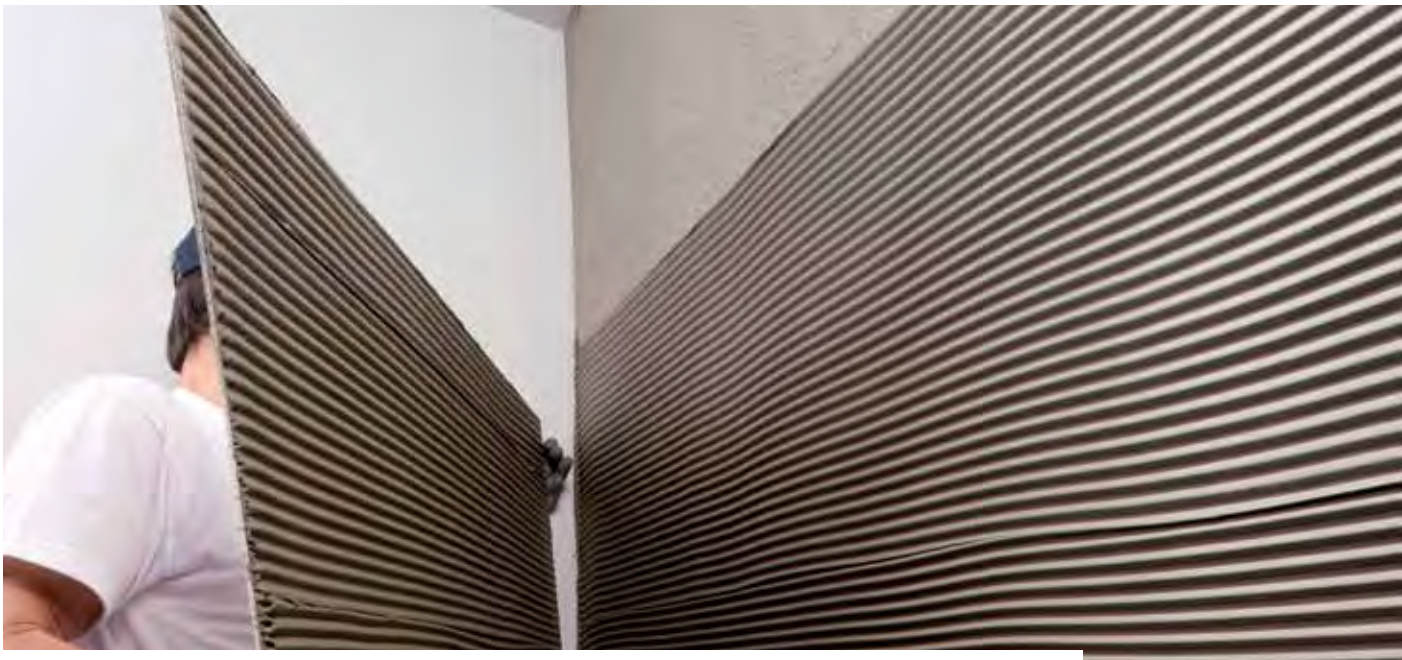
**Terme 3000**, Moravske Toplice (Slovenia)
**Period of the Intervention:** April-August 2013
**Intervention by Mapei:** supplying products for repairing the floors around the pools in the thermal baths and the terrace of Livada Prestige hotel
**Client:** Sava Hotels Resorts
**Contractor for repairing the areas around the pools:** Uni-Mobil, d. o. o.
**Contractor for the terrace's repair:** Eko-Gradvest, d. o. o.
**Laying companies:** Dacomm, d. o. o. (for the areas around the pools); Keramičarstvo Simončič Božo, s. p. (for the terrace)
**Works Direction:** Mrož, d. o. o., Andrej Gantar, i.g.
**Mapei Co-ordinator:** Gregor Knez, Mapei d.o.o. (Slovenia)

## Mapei Products

**Repairing works at the Livada Prestige Hotel**
Preparing the substrates: Eco Prim Grip, Planitop Fast 330
Waterproofing and sealing: Adesilex PG1, Mapeband, Mapeband SA, Mapeband TPE, Mapelastic, Mapenet 150
Laying ceramic tiles and grouting joints: K eraflex Maxi S1, Ultracolor Plus
Sealing expansion joints and floor joints: Mapeflex PU45, Primer AS

**Repairing the floors around the pools**
Repairing and preparing the substrates: Eporip, Planitop Fast 330
Laying ceramic tiles and grouting the joints: Keraflex Easy, Kerapoxy CQ
Filling and sealing expansion joints and floor joints: Mapeflex PU45, Mapefoam, Primer AS

**Fur more information see www.mapei.com and www.mapei.hr**



# Mapei adhesives: transparent quality

Compliance with European standards and clear, complete information about its products are the foundations for a company policy that invests in quality


FIG. 1

FIG. 2

CE

**MAPEI S.p.A**

Via Cafiero, 22 - 20158 Milano - Italy

The date of production is printed on the package

**EN 12004**

Improved cementitious adhesive
for tiling internal and external floors or walls

| | |
|---|---|
| Initial tensile adhesion | ≥ 1 N/mm² |
| Tensile adhesion after heat ageing | ≥ 1 N/mm² |
| Tensile adhesion after water immersion | ≥ 1 N/mm² |
| Tensile adhesion after freeze/thaw cycles | ≥ 1 N/mm² |

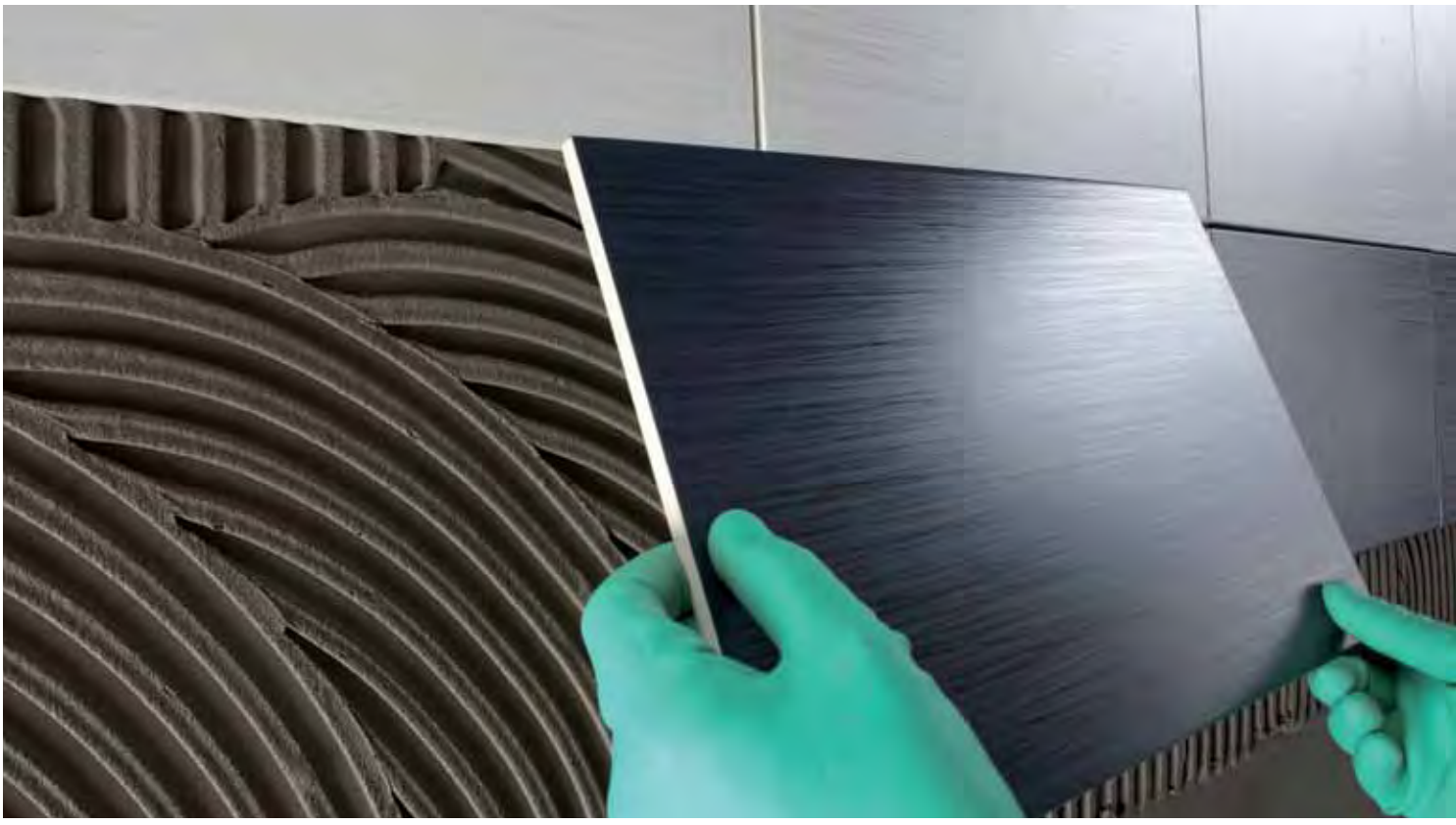
The quality levels of adhesives for ceramics are described efficiently and synthetically in the classification categories contained in European standard EN 12004. The first edition of this standard dates back to 2001 and it was written by a group of technicians working for CEN, the European Committee for Standardization.

These classes are divided into two categories, fundamental and optional. The fundamental classes for cementitious products are C1 and C2: whether a product belongs to the first class (normal) or the second class (improved) depends on the level of adhesion of the product.

Similarly, adhesives in dispersion may be either class D1 or D2, while for reactive adhesives there is only one single class, R. The optional classes covered in the standard only apply to cementitious adhesives, and they are F for fast-setting adhesives, E for adhesives with extended open time, T for adhesives with no vertical slip, S1 for deformable adhesives and S2 for highly deformable adhesives.

The aim of the fundamental classes is to define the characteristics listed in the CE mark for the product, which is obligatory for any product marketed within the European Union. Class C1 thus defines the minimum requirements of a cementitious adhesive for ceramics in Europe. The CE mark (Fig. 1) must be displayed on the bag used to package the product and states the minimum requirements of the fundamental class to which it belongs. The overall classification on the other hand, including the optional classes, is shown in a separate mark (Fig. 2).

Almost fifteen years after its introduction, EN 12004 is still an exceptional communications and marketing tool. Amongst the advantages it offers to users and to all those



who have to write technical specifications for the installation of ceramic, the most important are the following:

• The possibility of carrying out **an accurate comparison** of adhesives from different suppliers;

• Its capacity **to synthesise** a significant portion of a product's areas of use and to make the detailed description contained in a product's Technical Data Sheet almost redundant.

Below are a number of examples to demonstrate the second point:

➢ **To install porcelain tiles** with low water absorption it is preferable to use a product with higher bonding properties, that is, a product belonging to class C2;

➢ **The installation of large or heavy ceramic tiles on walls** requires an adhesive with no vertical slip, and so belonging to class T;

➢ **To install ceramic tiles on external surfaces during the summer**, in hot climates or if there are strong winds, an adhesive with extended open time is recommended, and so from class E;

➢ **To install large ceramic tiles on façades,** the recommended adhesive has an overall classification of C2TE S1, or even S2;

➢ **During the winter, when installing ceramic tiles** on building sites with insufficient heating, a rapid-setting adhesive is recommended, that is, from class F.

The same class is required in rooms where the floor needs to be put quickly into service after installation for pedestrian use.

We must underline, however, that adhesives also have other characteristics that may be just as important but are not described in the standards, particularly those that concern their workability, rheological properties or its colour.

Also worth a mention is the fact that the standard specifies ranges of values or minimum requirements for the various classes, and that there may be products that offer better performance levels than those specified whose use may be more appropriate under certain circumstances.

» EN 12004 STANDARD GIVES THE POSSIBILITY OF CARRYING OUT A COMPARISON OF ADHESIVES FROM DIFFERENT SUPPLIERS

It is always extremely important that the classification of a product is demonstrated by clear, transparent documentation that is readily accessible to clients.

EN 12004 itself establishes to a certain degree what actions a company needs to take to support the classification declaration of a product.

It is important, above all, that the declaration is backed up by a certificate issued by one of the notified European bodies on the basis of a test report that includes the data recorded during the tests carried out to define its classification.

These certificates must be obtained before marketing the product itself. Furthermore, the classification must be maintained over the years by complying with an FPC (Factory Production Control) system that involves periodic inspections and tests on the raw materials and production processes.

## MAPEI HAS DECIDED TO PUBLISH ITS PRODUCTS' DOPS AND MAKING THEM ACCESSIBLE FOR DOWNLOAD FROM THE COMPANY WEBSITE »

**FIG. 3**

Declaration of performance: No. CPR-IT1/0119

1. Unique identification code of the product-type: KERAFLEX MAXI S1
2. Type, batch or serial number or any other element allowing identification of the construction product as required under Article 11(4) of the CPR:
   IMPROVED CEMENTITIOUS ADHESIVE FOR CERAMIC TILES
3. Intended use or uses of the construction product, in accordance with the applicable harmonised technical specification, as foreseen by the manufacturer: Internal and external tiling on floors and walls
4. Name, registered trade name or registered trade mark and contact address of the manufacturer as required under Article 11(5): ***MAPEI*** S.p.A. – Via Cafiero, 22 – Milano (Italy) www.mapei.it
5. Where applicable, name and contact address of the authorised representative whose mandate covers the tasks specified in Article 12(2): Not applicable
6. System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V: System 3
7. In case of the declaration of performance concerning a construction product covered by a harmonised standard:
   The notified testing laboratory TUM München N. 1211 carried out the determination of the product-type on the basis of type testing on samples taken by the manufacturer under system 3 and issued the test reports N. 25080246/Gi and N. 25070387/Gi
   The notified testing laboratory MPA Dresden GmbH, N. 0767, carried out the determination of the reaction to fire on samples taken by the manufacturer under system 3 and issued the test reports No. 2008-B-2749/22 and No. 2008-B-2749/26.
8. In the case the declaration of performance concerning a construction product for which a European Technical assessment has been issued: Not applicable
9. Declared performance

| Essential characteristics | Performance | Harmonized technical specification |
|---|---|---|
| Reaction to fire | Class A2-s1,d0 $A2_{fl}$-s1 | EN 12004:2007 + A1:2012 |
| Bond strength as:<br>- initial tensile adhesion strength | ≥ 1,0 N/mm² | |
| Durability for:<br>- tensile adhesion strength after heat ageing<br>- tensile adhesion strength after water immersion<br>- tensile adhesion strength after freeze-thaw cycles | ≥ 1,0 N/mm²<br>≥ 1,0 N/mm²<br>≥ 1,0 N/mm² | |
| Release of dangerous substances | See SDS | |

10 The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 9.

This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.

Signed for and on behalf of the manufacturer by: Paolo Murelli – Corporate Quality Management
(name and function)

Milan, 01/07/2013 ..... (signature)
(place and date of issue)

### CE MARKING ACCORDING TO CPR 305/2011 AND EN12004:2007+A1:2012

CE
1211
0767

MAPEI
Via Cafiero, 22 – 20158 Milano (Italy)
www.mapei.it

07
CPR-IT1/0119
EN 12004:2007+A1:2012
KERAFLEX MAXI S1
Improved cementitious adhesive for internal and external tiling on floors and walls

| | |
|---|---|
| Reaction to fire | Class A2-s1,d0 / $A2_{fl}$-s1 |
| Bond strength, as: | |
| Initial tensile adhesion strength | ≥ 1,0 N/mm² |
| Durability for: | |
| Tensile adhesion after heat ageing | ≥ 1,0 N/mm² |
| Tensile adhesion after water immersion | ≥ 1,0 N/mm² |
| Tensile adhesion after freeze/thaw cycles | ≥ 1,0 N/mm² |
| Release of dangerous substances | see SDS |

### New regulations for construction products

On the 1st of July 2013, the new regulations for construction products introduced a mandatory **Declaration of Performance (DoP)**: for every product carrying the CE mark, adhesives included, the manufacturing company must issue a DoP that indicates its performance characteristics based on the relative standard. The aim of the DoP is to enable clients and users to compare the various products available on the market on the basis of a series of easily identifiable, measurable elements so that they may then identify which product is the most suitable for their specific requirements.

The DoP for adhesives, an example of which is shown in Fig. 3, carries the name of the body that issued the test report and the product certificate. This information has already been available for a number of years on the Technical Data Sheets for Mapei adhesives. Product certificates and test reports are available to all our clients upon request. Production controls and checks are carried out constantly by Mapei Research & Development laboratories to monitor the processes and ensure the quality parameters of Mapei adhesives are constant and reliable. If the company decides to optimise a certain product by modifying its formulation in some way, Mapei then requests new certification from the certification bodies.

The regulations require that a DoP must be available to all clients, but Mapei has decided to make life easier by publishing them and making them accessible for download from the company website. In fact, it is entirely in the company's interest to be able to provide documented evidence of its DoP's and to make all the certificates that back them up readily available. This is something that doesn't always happen in the building industry where a simple search soon reveals how the information available is of poor quality, confusing or inconsistent.

For a company that considers quality as one of its foundation stones, it is important to fully and transparently exploit its value and this is only possible if all the information required are supplied to demonstrate the truth behind Mapei's declarations of performance.

And only in so doing will it be possible to keep our clients fully informed about the characteristics and properties of the adhesive they are using, thus making it truly safe to use the material they are installing within the specific area of use and for every single building site.

**Stefano Carrà.** Mapei Corporate Research & Development Laboratory


Bocconi University - Milan, Italy

# *Granirapid*

**Two-component high performance fast-setting and hydrating cementitious adhesive for ceramic tiles and stone material.**

- Particularly suitable for bonding stone material with fast drying times
- Particularly suitable for rapid re-tiling jobs or flooring that has to be ready for use within very short times (supermarkets, hospitals, swimming pools, etc.)
- Suitable for bonding floorings subject to heavy traffic

CE EN 12004 · EN 13888 C2F S1 MAPEI · GEV-EMICODE EC 1 PLUS very low emission

Product info

/mapeispa

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

MAPEI®
ADHESIVES · SEALANTS · CHEMICAL PRODUCTS FOR BUILDING

# “Colours with passion for a bright and colourful ambience”


## *Dursilite / Colorite*

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

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

Product info

/mapeispa

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

MAPEI®
ADHESIVES · SEALANTS · CHEMICAL PRODUCTS FOR BUILDING

# It is party time for Mapei in Austria

On 5th June the Group's Austrian subsidiary opened its doors to customers, journalists and partners for a very special evening


**Mapei GmbH**,
Nussdorf ob der Traisen


**Mapei Betontechnik GmbH**,
Langenwang

Mapei GmbH, the Group's Austrian subsidiary, has plenty to celebrate. The second foreign branch in the history of Mapei, it was a key player in the company's initial internationalisation plans: it was actually established in 1981, just after the Group first "landed" overseas when Mapei Inc. was set up in Canada in 1978. Ever since then it has grown constantly, gaining a fine reputation in every region of Austria due to the quality of its products and efficiency of its services.
It now has a staff of 80 and headquarters in Nussdorf ob der Traisen in north-eastern Austria, including offices, a manufacturing plant, a Quality Control Laboratory, and a training centre for its customers and employees. The Nussdorf ob der Traisen plant was one of the first Mapei opened abroad and has acted as a bridgehead for the Group's expansion operations into Russia, Hungary and the Czech Republic. The company also has warehouses in various locations around Austria (Brunn am Gebirge, Graz, Klagenfurt, Hall in Tirol) used for quickly supplying its own customers with building

» MAPEI GMBH WAS THE SECOND GROUP'S SUBSIDIARY ABROAD

**ANDREAS WOLF**
Mapei GmbH's General Manager

products manufactured by Mapei GmbH or coming from other plants belonging to the Group. The subsidiary's technicians and business representatives also directly assist customers both on building sites and at their offices all over Austria.
Mag. Andreas Wolf took over the position of the Managing Director of Mapei GmbH and Mapei Betontechnik GmbH in August last year. He wants to form his team to the most competent one within the Austrian industry sector of construction material and he attaches great importance to transporting the strength of the whole Mapei Group to the Austrian customers. To ensure the company continues to grow, valuable additions have recently been made to the staff of Mapei Austria: two new employees, Doris Floh and Katharina Maschler-Weber, have joined the marketing department; a new sales manager (Paul Solczykiewicz) is now in charge of sales of products for resilient and textile surfaces; new sales reps (Gerhard Schneeberger, Thomas Sparber, Werner Gollner, Markus Gosch and Patrick Ewald) have been hired for the product lines of ceramic, resilient materials and building products. Stefan Schallerbauer, the product manager for the ceramics range, is also taking charge of technical assistance operations.

» ADDITIONS WERE MADE TO THE STAFF TO HELP THE COMPANY GROW

In 2009 a new Austrian subsidiary joined the Mapei Group: Mapei Betontechnik GmbH, a company that manufactures admixtures for concrete and powder materials for building, whose offices are in Langewang. Mapei Betontechnik GmbH's main target markets are Austria, Germany and Italy, but the company also exports to Azerbaijan, Croatia, Poland, Romania, Russia, Slovakia, the Czech Republic and Hungary.
Thanks to these two subsidiaries, Mapei can now claim to have a dominant position on the Austrian building market and this is what was being celebrated during the special gala evening held at the Mapei GmbH headquarters on 5th June.

### New headquarters for welcoming journalists and customers

During the first six months of the year the Mapei GmbH headquarters underwent some renovation work. The outside façades were repainted: SILANCOLOR PAINT, a siloxane paint for indoors and outdoors, was applied right after treating the substrates using SILANCOLOR PRIMER, transpirant siloxane undercoat.
The corridors were completely restored: the walls were treated using the levelling compound PLANITEX FR (manufactured and distributed in Austria by Mapei GmbH), repainted with DURSILITE, a water-based wall paint, and decorated with pictures depicting some of the Group's international building projects.
The entrance hall was also recently renovated and furnished with comfortable sofas.
The work in question was carried out using MAPEGROUT 430 for preparing the substrates, MAPELASTIC and MAPEBAND for their waterproofing, ELASTORAPID for in-

## MAPEI GMBH'S NEW TEAM

**STEFAN SCHALLERBAUER**
Technical Assistance Manager

**PAUL SOLCZYKIEWICZ**
Sales Manager for the product range for resilient and textile materials

**GERHARD SCHNEEBERGER**
Sales Rep

**THOMAS SPARBER**
Sales Rep

**WERNER GOLLNER**
Sales Rep

**MARKUS GOSCH**
Sales Rep

**PATRICK EWILD**
Sales Rep


**ABOVE.** Mapei GmbH's headquarters, which have recently been completely renovated, also include a manufacturing plant, a training centre and a Quality Control Laboratory.

stalling stone materials, and ULTRACOLOR PLUS for grouting operations.

A cutting-edge kitchen was also installed between the entrance area and training centre. Here again Mapei products were used for preparing the substrates (PRIMER G, ULTRAPLAN MAXI, MAPESTRIP PERIMETER 50 - manufactured and distributed in Austria by Mapei GmbH), installing ceramics and wooden material (KERAQUICK+LATEX PLUS, MAPESTONE BASIC - manufactured and distributed in Austria by Mapei GmbH), grouting joints (ULTRACOLOR PLUS), and sealing the expansion joints (MAPESIL LM).

The training centre, which regularly hosts six courses-a-month, was extended to accommodate even more customers and employees: the 24 seats originally available were increased to 36. The steps were completed using the adhesive ADESILEX LP, ideal for laying resilient floor and wall coverings. This is where practical demonstrations of how to use products are held.

Again on 5th June, before the evening's celebrations, this is where a press conference was held for journalists specialising in this industry. Speeches were given by Veronica Squinzi, the Group's Internationalisation and Global Development Director, Marco Squinzi, Research & Development Director, and Adriana Spazzoli, Operational Marketing and Communication Director, who illustrated to all those in attendance the Group's "scope and scale" in terms of turnover, staff and global presence, before providing an overview of the very latest investments in manufacturing plants, storage facilities, offices, laboratories, corporate acquisitions and new branches all over the world. The targets achieved by

**DORIS FLOH,**
Marketing Manager

**KATHARINA MASCHLER-WEBER**
Marketing

» THE TRAINING CENTRE HAS BEEN EXTENDED AND NOW HAS 36 SEATS





**ABOVE.** During the night guests were entertained by a live performance by the New York artist, Billy the Artist, and music by a local band.

Mapei GmbH from when it was originally founded until the present day, the range of building solutions available to Austrian customers, and the subsidiary's plans for the future, were, on the other hand, outlined in the speech given by Andreas Wolf.

**Summer celebrations in Nussdorf**

Mapei GmbH has always focused plenty of attention on its business relations with customers and was keen to show this at the "summer celebrations" held on 5th June. The company decided to celebrate in the evening so as not to interfere with the guests' business activities.

At 5 p.m. guests were welcomed outside the Mapei manufacturing plant in an area suitably decorated for the occasion. Here they were able to enjoy an aperitif, greet members of Mapei GmbH, and take a careful look at an overview of the systems offered by the company.

At 6 p.m. everybody taking part moved into the Gala dinner area and were officially welcomed by Andreas Wolf. Wolf reminded everybody of the goals and targets achieved by Mapei GmbH in terms of turnover, production lines and operations on the Austrian market, also thanking all those in attendance for having taken part in this success story.

Tom Walek then took the stage, a famous Austrian TV and radio presenter, who entertained guests with amusing stories before calling members of the Group's manage-

**THE PRESS CONFERENCE AND THE APERITIF BEFORE THE CELEBRATIONS**

» "WE HAVE ACHIEVED SOME REMARKABLE GOALS" WAS THE MOTTO FOR THE CELEBRATIONS

ment team attending the event onto centre stage: Veronica Squinzi, Marco Squinzi and Adriana Spazzoli. Walek then asked them some questions about the company's future goals in Austria and it soon became clear that Mapei's executive management team was extremely keen to maintain very close ties with customers in this country as part of the Group's international operations.

In accordance with this line of thinking, guests got the chance to enjoy a number of culinary specialities from both Austria and Italy. At the end of the gala dinner, everybody taking part was "immersed" in a world of art, thanks to the performance given by Billy the Artist, a famous New York artist. Billy is well-known for his live paintings, performances during which he paints very precise dark strokes and lines in an atmosphere charged with energy. Billy's performance really captured the audience's imagination through its vitality, astounding everybody with the beauty of his finished work.

The draw for the prizes up for grabs during the Gala dinner was made at ten o'clock in the evening. Three lucky customers were awarded artworks by Billy The Artist: a painting worth approximately 30.000 Euros, a chair and a lamp decorated with sketches by the artist himself, all created by Billy there and then during his live performance.

After the draw, the musicians and singer of a local band took the stage and entertained guests for the rest of the evening.


**ABOVE.** Andreas Wolf welcomed the guests at the beginning of the gala dinner. **CENTRE PAGE.** The New York artist known as Billy the Artist.

The Weinblick winery, immersed in the middle of five vineyards, is located in the secluded Priel area in the rolling hills of north-east Austria.


# Weinblick Grafinger hotel and winery

## Mapei products helped create an oasis of peace amongst the Austrian vineyards

The Weinblick winery, immersed in the middle of five vineyards, is located in the secluded Priel area in the rolling hills of north-east Austria. Since April 2013 the winery, owned by the Grafinger family which has been making wine for a number of years, has been offering its guests the chance to try various types of locally produced wine, taste local gastronomic delicacies in three welcoming rooms and relax in one of the hotel's five luxury rooms. All this with a marvellous view of the vineyards, which are also used as a backdrop for business functions and private parties, such as weddings and birthdays.

### Quality products for a professional project

Two years were spent on the design work alone before constructing a building suitable for these kinds of activities. Work then was done under the direction of the Wihelm Seidl GmbH engineering studio. Mapei products were used in a number of the areas, and in particular to install the floor coverings in the bedrooms, corridors and large multi-purpose function room.

EPORIP two-component epoxy adhesive was used to monolithically seal the joints in the screeds before a consolidating and waterproofing treatment was applied on the substrates using ECO PRIM PU 1K TURBO one-component, solvent-free, rapid-drying, moisture-curing polyurethane primer with very low emission level of volatile organic compounds (VOC). The adhesive chosen to bond the rustic oak wooden floor was ULTRABOND ECO S955 1K one-component, solvent-free, sililated polymer-based adhesive, suitable for all types of wooden floorings, with very low emission level of VOC.

To guarantee just the right amount of shine, the surfaces were treated with ULTRACOAT OIL natural drying oil resin, the ideal product to guarantee an excellent oil finish on wooden

### IN THE SPOTLIGHT

**ULTRABOND ECO S955 1K**

It is a one-component, solvent-free sililated polymer-based adhesive with an extremely low emission level of volatile organic compounds (**EMICODE EC1 R Plus**). ULTRABOND ECO S955 1K is used for bonding prefinished materials, lamparquet, slats, floor-boards and all types of parquet on cementitious screeds, screeds made using MAPECEM, MAPECEM PRONTO, TOPCEM, TOPCEM PRONTO and similar products, old wooden floors, ceramic, marble, terrazzo, etc. and anhydrite screeds. It can contribute up to **5 points** to obtain the **LEED** certification.

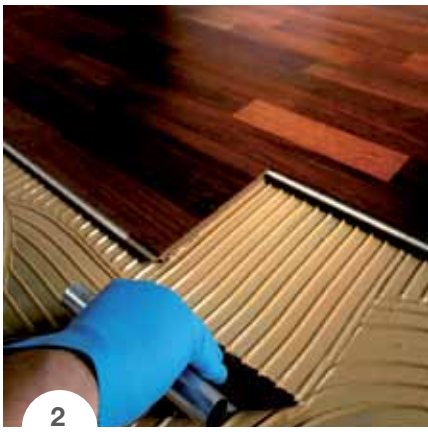


**PHOTO 1.** Oak wooden floorings, bonded with Mapei products, were also chosen for the floor in the large multi-purpose function room.
**PHOTO 2.** Application of ULTRABOND ECO S955 1K adhesive.
**PHOTOS 3 and 4.** Some of the areas, also with wooden floors, are used by the guests to relax and sample the local wines in warm, welcoming surroundings. The quality finish of the floorings was guaranteed by using ULTRACOAT OIL and ULTRACOAT OIL CARE.

floors. This job was finished off by applying ULTRACOAT OIL CARE with a rotating head fitted with a white ULTRACOAT PAD and a cotton rag. ULTRACOAT OIL CARE is a natural drying oil-based resin in water dispersion used to finish wooden floors treated with oil.
Thanks to the quality of the work carried out by the professional floor installers and the use of high quality Mapei products, work at the Grafinger winery was completed after just one year, allowing the structure to open to the public ahead of schedule.

This article has been taken from *Realtà Mapei Österreich* No. 1, the in-house magazine published by Mapei GmbH, Mapei Group's Austrian subsidiary.

## Technical Data

**Weinblick Grafinger Hotel**, Priel (Austria)
**Client:** M&M Grafinger GmbH
**Project:** Architect Wolfang Tillich
**Period of Construction:** 2012-2013
**Year of the Intervention:** 2013
**Intervention by Mapei:** supplying products for preparing substrates, laying and finishing wooden floorings
**Works Direction:** Wilhelm Seidl GmbH
**Laid Materials:** oak wooden floorings
**Laying Company:** treppen-türen-technik GmbH
**Mapei Co-ordinator:** Christian Sabitzer, Mapei GmbH (Austria)

## Mapei Products

Preparing the substrates:
Eco Prim PU 1K, Eporip
Laying wooden floorings:
Ultrabond ECO S955 1K, Ultracoat Oil, Ultracoat Oil Care

**For further information see www.mapei.at and www.mapei.com**

# Donau City Tower 1

The tallest skyscraper in Austria, completed using Mapei products, was officially inaugurated at the end of February

The Donau City Tower project, in Vienna's modern "Donau City" district on the banks of the Danube, consists of two buildings: the DC Tower 1 skyscraper, which is 250 m tall and was officially inaugurated on the 26th of February this year, and a second skyscraper, the DC Tower 2, which is still in the design stage. Designed by the French architect Dominque Perrault, DC Tower 1 was created in collaboration with the Viennese architecture studio Hoffmann-Janz Architekten. It is characterised by the irregular form of its dark glass façade which has surfaces with both protrusions and recesses. To absorb the lateral stresses caused by the high winds blowing against the structure, a 350 tons pendulum was inserted between the 56th and 60th floors. The skyscraper's 60 floors provide comfortable surroundings for the offices of international companies, apartments, a hotel, a gymnasium, a restaurant and, on the top floor, a bar that is also to hold special events. Along the skyline of Vienna, DC Tower 1 is noticeably taller than the Millennium Tower on the other side of the Danube, although the Donauturm panoramic observation terrace, at 252 m, is still the tallest building in Vienna.

**Eco-sustainability criteria**

The construction of this imposing structure required extra special care in terms of sustainability. Thanks to the use of sophisticated heating and air-conditioning systems, energy consumption is much lower and maintenance costs have been drastically reduced. Innovative technology used in the construction of the tower has played an important part in the DC Tower 1 being awarded LEED certification, respecting "green building" criteria approved by the European Commission. Thomas Jakoubek, President of the real estate company WED responsible for development of this area, stated: "Our aim wasn't to construct the tallest tower, but to get the most in terms of efficiency, functionality and architectural quality. With this skyscraper our intention is to give

Photos: © DC Towers / Michael Nagl

a strong impulse to the image of Vienna as an innovative environment for business and research, but also as a place for modern living". Work started in the summer of 2010 and required a considerable amount of resources and materials. For the foundations alone 60,000 m³ of earth had to be removed. Construction work was made even more difficult by the characteristics of the area (it is very close to the River Danube) and the skyscraper's difficult proportions of height and width. It required the use of 110,000 m³ of concrete and 20,000 tons of steel. The end result is a structure with an enormous weight: 290,000 tons.

Mapei, through its Austrian subsidiary Mapei GmbH, was on site during all the construction stages of the skyscraper. The company supplied admixtures manufactured and distributed in Austria by Mapei Betontechnik, such as the super-plasticisers DYNAMON LZ 65 and DYNAMON LZ 100, and the retardant MAPETARD VZ used to prepare 110,000 m³ of concrete.

Mapei products were also used to bond granite and marble slabs on the walls and floors of the offices inside the building, such as the adhesives KERALASTIC, KERAFLEX MAXI S1 and ELASTORAPID, ULTRACOLOR PLUS grout and the sealants MAPESIL AC and MAPESIL LM for the expansion joints. The preparation of the substrates was completed with the primers PRIMER G and ECO PRIM GRIP and the self-levelling smoothing compound ULTRAPLAN.

This article has been taken from *Realtà Mapei Österreich* No. 1, the in-house published by Mapei GmbH, Mapei Group's Austrian subsidiary.

## IN THE SPOTLIGHT

**ECO PRIM GRIP**

It is a multi-purpose, ready-to-use solvent-free primer composed of synthetic resin in water dispersion and selected inert materials with excellent bond strength, resistance to water and ageing. It guarantees a rough keying surface ideal for render, smoothing and levelling compounds, thus ensuring an excellent bond. It is a primer for internal and external floors and walls and may be used to improve the bond of all types of cement, gypsum and lime-based plasters on substrates made from concrete, brickwork, vibro-compressed concrete blocks, lightweight blocks and gypsum. It is also suitable for improving the bond of adhesives for ceramics, smoothing and levelling compounds on non-absorbent surfaces, It can contribute up to **4 points** to obtain the **LEED certification** for eco-sustainable buildings.


**IN THE FACING PAGE.** The DC Tower 1 skyscraper, with its irregular glass façade, was built using Mapei admixtures for the concrete.
**ABOVE.** The DC Tower is the tallest skyscraper in Austria, but is not as tall as the Donauturm panoramic observation terrace on the opposite bank of the Danube in Vienna. Ceramic tiles and stone slabs were bonded inside the building using Mapei systems.

## Technical Data

**DC Tower 1,** Vienna (Austria)
**Project:** Dominique Perrault and Hoffmann Janz ZT GmbH
**Period of Construction:** 2010 - February 2014
**Intervention by Mapei:** supplying admixtures for concrete and products for laying ceramics and stone materials
**Client:** WED (Wiener Entwicklungsgesellschaft für den Donauraum AG)
**Static Planning:** Arbeitsgemeinschaft Tragwerksplanung Bollinger Grohmann Schneider Ziviltechnikergesellschaft mbH & Gmeiner Haferl Zivilingenieure TZ GmbH
**Contractors:** PORR Technobau und Umwelt AG and Max Bögl Bauunternehmung GmbH
**Laying Company:** Steinindustrie Dipl. Arch. Albert Friepess Ges.m.b.H & Co. KG
**Mapei Co-ordinators:** DI Georg Partlic, Florian Rirtz, Dipl. Ing. Fares Maghsood, Mapei Austria

## Mapei Products

Preparing the concrete mix: Dynamon LZ 65*, Dynamon LZ 100*, Mapetard VZ*
Preparing the substratesi: Primer G, Ultraplan, Planitop 400, Eco Prim Grip
Laying ceramic tiles and stone materials: Keraquick, Keralastic, Keraflex Maxi S1, Elastorapid
Grouting joints: Ultracolor Plus
Sealing expansion joints: Mapesil AC
These admixtures are manufactured and distributed in Austria by Mapei Betontechnik

**For further information see www.mapei.it and www.mapei.com**

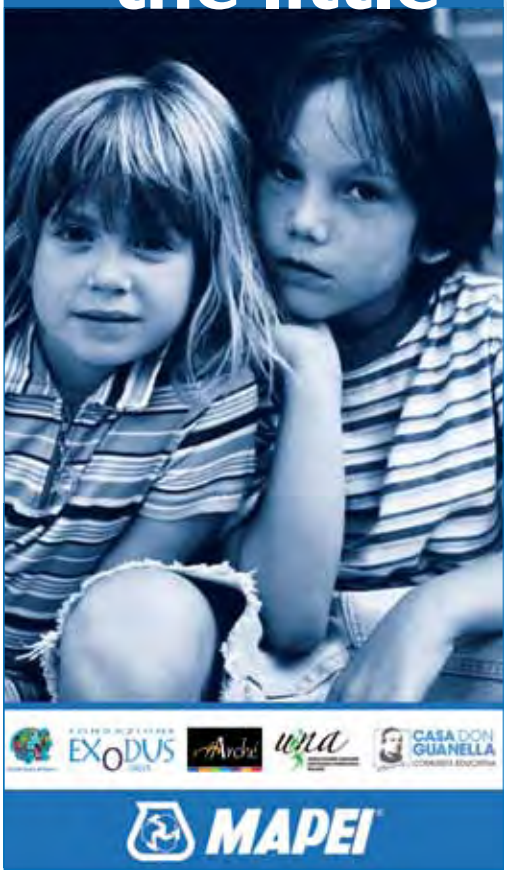


## 2005-2014: 10 OUT OF 10 FOR TEN YEARS!

# MAPEI DAY 2014

Many people can still vividly remember the first edition of Mapei Day held in July 2005. Everybody still has a very clear recollection of that first time when friends, guests and partners of Mapei all gathered around Giorgio Squinzi, CEO of the Mapei Group, to climb up Stelvio Pass (near Bormio, in the Province of Sondrio, Northern Italy) – either on foot or by bike – together with him. For many people it was their first encounter with a climb that all amateur cyclists have to make at least once. For everybody present it confirmed just how effectively the Mapei spirit can spread the values and principles filtering between the working world and the world of sport.

2014 marked the 10th edition of the event! Ten editions of Mapei Day, ten weekends of celebrations involving not just all the numerous company guests, but also the entire community of Bormio and lots and lots of sports lovers. An event that has gradually grown over time without losing any of the freshness and passion that are the key ingredients in a highly successful formula that hinges around certain very simple and basic values. A simple recipe, which, for this very reason, is unique and highly successful: in a party atmosphere and surrounded by a beautiful natural setting


that can only be matched by very few places around the world, the desire and pleasure to come together as a team and sharing the hard work and pleasure of enjoying sport together. If we had to sum up these ten unforgettable mid-July weekends in Bormio and give them a mark, then there is no doubt about it: the mark is 10/10 or rather 10++!

Once again this latest 2014 edition was highly applauded and enjoyed by everyone. A very special edition and a "round number", because it was also the 30th edition of the Re Stelvio cycling race, a special test for amateur cyclists who love riding up mountains and, above all, the greatest "Coppi Summit" of all, the highest climb in the Tour of Italy cycling race named after the legendary Italian cyclist Fausto Coppi.

As usual, the event was organised by Mapei together with Unione Sportiva Bormiese sporting association under the patronage of the City of Bormio, Province of Sondrio, Region of Lombardy and Valtellina district, with the support of Mapei Sport Research Centre. The event also had the backing of the Banca Popolare di Sondrio bank and Pirovano Ski University, plus the usual sponsors: Mic Shimano, Colnago, Santini, Bormio Terme, Enervit and Giussani.

Once again everybody taking part in this edition of the event got the chance to help out struggling children, and there were fund-raising points located all over Bormio to collect money on behalf of organisations that help out babies and young children who are in difficulty: Arché, Una, Exodus, Piccola Opera di Traona and, a new entry this year, Casa Don Guanella in Lecco (Italy).

## THE COMPANIES WHO HAVE ENJOYED TEN YEARS OF SPORT AND CHARITY WITH MAPEI

MAPEI SPORT
USB
Banca Popolare di Sondrio
PIROVANO
WINNING TIME
SHIMANO
ENERVIT
The event is supported by Bormio City Council
The event is supported by the Sondrio Provincial Council
RegioneLombardia
Valtellina


## GOLF TOURNAMENT

### SATURDAY 12TH JULY - 9.00 A.M.

Once again this year while awaiting Sunday's races, the main sports event on Saturday was the 2014 Mapei Golf Trophy for FIG (Italian Golf Federation) card-holders only.
On a day when bad weather had been forecast, there was actually plenty of sunshine alternating with cloudier weather as 115 newcomers to this sport took to the greens and fairways of Bormio Golf Club to take their first golf shots under the supervision of the Club's instructors.
About 40 golfers took part in the 18-hole Stableford scoring system Shotgun competition on what is rightly described as one of the best mountain golf courses in Italy.
First place with 39 points went to Roberto Bono with Carlo Perego coming second with 38 points and Darragh Connoly third with a score of 37 points. First place in the women's event and 18th overall was Diana Barassi, who scored 29 points.

**ABOVE.** Bormio Golf Club hosted the 2014 Mapei Golf Trophy.

## SKIING

### SATURDAY, 12TH JULY - 8.00 A.M.

The snowboard and ski races also held on Saturday on the slopes of the Stelvio glacier turned out to be really exciting and entertaining. About 50 skiers did battle down the course set, as usual, by Pirovano Ski University, while a further 40 Mapei guests just enjoyed skiing without taking part in the race. The temperature was perfect for the giant slalom, which was won by Pierre Gelpi ahead of Marco Mazzoni and Riccardo Piccoli. Luisa Chenetti won the women's race and was seventh overall, while the best snowboarder was Franco Cappelin.

**BELOW.** Once again this year the ski race on the slopes of Stelvio Pass was organised by Pirovano Ski University.


# CYCLING, RUNNING AND ROLLER SKIING: setting from Bormio up to Stelvio

**SUNDAY 13TH - 9.15 A.M.**

To start the day's events, the company's CEO, Giorgio Squinzi, and a group of extremely loyal champion cyclists of the calibre of Cadel Evans, Andrea Tafi and Davide Nardello, were joined by former Olympic canoeing champion and now Sports Councillor for the Lombardy Region, Antonio Rossi. Almost 70 roller skiers, approximately 600 runners and walkers, about 650 cyclists and over 1000 fun cyclists rode up the 22 km leading from Bormio to the top of Stelvio Pass along the 200-year-old road designed by Carlo Donegani with its 40 hairpin bends and a height gain of over 1,500 m from Bormio to the summit. Over 2500 athletes, sportsmen and women and people just taking part for fun managed to cross the finishing line. A lot of people who had entered the race decided to set off before the official start time to make sure they reached the top; their names do not appear among the finishers but they are there among the starters. In addition to these people, dozens of other people decided to put themselves to the test and walk up the road to the top of the Stelvio. The weather certainly helped the organisers and everybody who took part was delighted with the hospitality laid on at the summit and the well-organised assistance/refreshment service provided along the route.

**ABOVE.** The start of the races in Via al Forte in the middle of Bormio.

**BELOW.** Giorgio Squinzi with a group of extremely loyal champion cyclists such as Cadel Evans, Andrea Tafi and Davide Nardello, and the Head of Mapei Sport's Biomechanical Laboratory Andrea Morelli.

# RE STELVIO CYCLING RACE AND BIKE RIDE

## SUNDAY 13TH JULY - 9.15 A.M.

All things considered, the race from Bormio to the Stelvio Pass is a short one for amateur cyclists; excellent for holding a fun bike ride and perfect for pure climbers. But it is also ideal for people used to climbing mountains as part of ski mountaineering events, like Michele Boscacci. Last year this member of the Italian national ski mountaineering team came second; but this year, even though his time was slightly slower (1h 06'13"7) he managed to sprint over the last few metres to win the race. Just a few seconds behind him came Cristian Pinton (Beraldo Greenpaper) and the Norwegian cyclist Anders Norderhus Roe. Andrea Acquistapace from Velo Sondriese cycling team, who has already won the event several times, came home fourth after attempting to break away from the other riders.

The women's race was won by Valentina Mabritto (Racing Rosola Bike), who finished in a time of 1h 24'32"3; second step on the winner's podium went to Tania Manzoni (Peli Bike Team), who won the week before on Mount Gavia, with Danielle Garden from US Bormiese coming home third. Lots and lots of amateurs rode and walked along the switchbacks and hairpins leading to the top of the Stelvio. The fun cycling and walking races had the highest number of participants.

The race for fun runners was won by the new coach of Bormiese Calcio Davide Menegola (with a finishing time of 2 hours and 4 minutes), ahead of Paolo Brumana and Enrico Granzella.

The winner of the fun bike race, Gabriele Lodovici, also recorded the excellent time of 1h 16'36"30, beating Christopher Sala and Cadel Evans, a special guest of Giorgio Squinzi, who honoured this edition of the Re Stelvio cycling race by coming home in third place.

**ABOVE.** Sprint to the finish line at the top of Stelvio Pass.

**BELOW.** Lots of amateurs tackled the Stelvio climb either on foot or by bike. Below right, Alessandro Sallusti, the editor-in-chief of the Italian newspaper *Il Giornale*.


## HALF MARATHON AND WALK

### SUNDAY 13TH JULY - 8.50 A.M.

The second event to start on Sunday morning was the half marathon road race. Michele Belluschi (Daini Carate Brianza) and Carmine Buccilli (Casone Noceto) tried to set the pace; they were closely followed by last year's winner from Atletica Valli Bergamasche, who broke away from his closest rivals along the final few switchbacks to win in a time of 1h 37'40"5. Buccilli came second just under 25 seconds behind, while Belluschi came third one minute behind the winner. Gloria Giudici wrote her name in the record books as this year's winner of the Mapei half marathon: representing Atletica Rovellasca, she crossed the line at the top of Stelvio Pass in 2h 01'19"1. Ilaria Bianchi (Miotti Arcisate) came home second and third place went to Sarah Aimee L'Epee.

## SKI ROLL

### SUNDAY 13TH - 8.45 A.M.

The roller skiers were the first to set off at 8.45 in the morning of Sunday. The first attack was launched by the reigning champion Simone Paredi, who eventually had to give way to Sergio Bonaldi representing the Italian army, who crossed the finishing line all on his own after 1h 20'52"1 at an average speed of 13 km/h. He was followed home by Francesco Rossi representing Polisportiva Valmalenco just over one minute behind and then Toni Livers from Team Rossignol. Serena Boner from Team Salomon won the women's race with a time of 1h 36'56"8; Kseina Konokhova from Team Russia and Natalya Zernova from Team Skiwax came in about 10 minutes behind her.


## THE FINISH LINE

**LEFT.**
Cyclists, runners, fun riders and roller skiers all crossed the finish line, as usual, at the top of Stelvio Pass. The picture shows the athletes crossing the finishing line with Alessandro Brambilla's commentary.


# PARTY AT THE PENTAGONO

## BORMIO – SATURDAY 12TH JULY

**ABOVE AND RIGHT.** During the Gala evening at the Pentagono the various shirts from previous editions of Mapei Day were back on show. The shirt for the 2014 edition is designed to re-evoke all the others and is decorated with the various animals chosen to symbolise the event over the last 10 years.

The gala evening was held in the multipurpose space of the Pentagono on Saturday evening with all Mapei's friends, partners and guests gathering in the company of Giorgio Squinzi and his family.

The evening was hosted by Adriana Spazzoli, "the queen of mistresses of ceremonies" as she was described by Alessandro Brambilla, the legendary presenter of Mapei Day, who was also on stage to entertain all the guests. A number of Italian television channels also attended the Gala evening and sports events held on Mapei Day. A film crew from Sky Channel recorded the evening's events and made some live broadcasts and a documentary shown later on. The cameras of Bike Channel (Sky Channel 214) were also there for interviews and comments on the event.

After an introductory speech by the new President of the Banca Popolare di Sondrio bank, the professor and lawyer Francesco Venosta - who took over the position from Piero Melazzini, who will be staying on as an Honorary President of the bank - a passionate Giorgio Squinzi reminded everybody about the inspiring principles behind this mid-summer event: a festival of sport and celebration of Mapei's corporate values, without forgetting about charity and interpersonal relations.

A number of local authorities and journalists were in attendance at the event, such as the editor-in-chief of the Italian newspaper *Il Giornale*, Alessandro Sallusti - who also took part in the following day's bike ride - and lots of famous cyclists like Cadel Evans, Gianni Bugno, Andrea Tafi, Daniele Nardello and Ivan Santaromita.

To commemorate the 10th anniversary of Mapei Day, the various sports shirts from all 10 previous editions of the event were worn and pres-ented by 10 local girls. During the evening Claudio Pecci, the head of Mapei Sport Research Centre, awarded a cheque to the winner of the annual "Aldo Sassi" research prize for young graduates in the motor sciences to promote research projects in the field of sport. It is worth pointing out that the prize was set up by Mapei Sport in partnership with Con-findustria (the Confederation of the Italian Manufacturing and Service Companies)'s Mai Foundation to commemorate the person and scientific work of Professor Aldo Sassi, the founder - together with Giorgio Squinzi - of the Centre and its General Manager until he passed away in 2010.













ASSEGNO DI RICERCA
«ALDO SASSI»


All the staff and players from Sassuolo football team, the team from Central Italy sponsored by Mapei, attended the event and then immediately set off across the Stelvio in the direction of Malles, a resort in Val Venosta valley where the players' summer training camp was held. Both the management staff and players celebrated together with Mapei guests the fact that the team managed to avoid relegation from Serie A last May (see *Realtà Mapei International* No.48) and also told the television journalist Marco Nosotti how they would be tackling the forthcoming season.
In conclusion, it is worth noting how the team coach, Eusebio Di Francesco, summed up the core elements of his vision of football in three words: planning, passion, personality. Principles also characterising Mapei's corporate spirit, which the company has always drawn on to build and continue to expand its success in Italy and around the world. These are the solid foundations on which Sassuolo is now beginning the new season.
The end of the evening was inevitably devoted to the following day's climb up the Stelvio. Mario Zangrando, the President of US Bormiese Ciclismo, provided some technical advice about how to tackle the climb and Dr Luca Mondazzi - Director of the Sport Nutrition and Dietology Service - explained what to eat in order to tackle the Pass full of energy.

**ABOVE.** The television journalist Marco Nosotti interviewed Carlo Rossi, President of Sassuolo, who was standing next to Giorgio Squinzi and Giovanni Carnevali, Sassuolo's Managing Director.


**LEFT.** Sassuolo football team has special fans!
A group of football fans cycled from Sassuolo to Bormio. They were Carlo Silingardi, Marco Rebecchi, Emilio Ronchi, Claudio Nizzoli, Franco Ferriani, Andrea Orlandi, Alberto Gualandri and Enrico Chiodi. Andrea Boni and Marco Medici (shown opposite) set off from Milan on foot and walked to Bormio in six stages.

# Sassuolo is back in action, the adventure is beginning again

## News, prospects and familiar faces in the black-and-green team

The holidays are over and the adventure is about to begin again. Just over a short while - the exciting second-to-last match of last football season that ensured the green-and-blacks would stay in Italy's top football division - Sassuolo team is getting ready to do battle again. The Mapei-sponsored team from Emilia (Central Italy) congregated in Sassuolo on 10th July to get ready to take on its fresh challenges and the mission the managerial staff and fans hope the team will achieve during the new season that is beginning: first and foremost, to stay in top-flight Italian football without having to go through all the ups-and-downs of last season and to achieve those even more ambitious goals that may very well come along during the season. All this while remaining the "friendliest team" in the Italian Serie A.

In sport in general and football in particular, the imponderable and fate (a penalty that either should or should not have been awarded, hitting the post or crossbar, an injury or an offside goal in the very last second) play an important role that needs to be taken into account. It is the so-called episodes: events that may or may not be in your favour, which, Sunday after Sunday, can determine the outcome of an entire season. This is the wonderful thing about football, so they say. But it is also what encourages you to get better organised and work really hard, so as to at least partly take fate out of the equation. That is what Sassuolo has started to do as it changes and restructures to be a truly top-flight football club in every respect and, hence, be able to offer its fans some really memorable moments.

### Reorganisation starts again from scratch

With this in mind, the organisational structure of the club has changed after appointing Giovanni Carnevali as the Managing Director and General Director



and Giovanni Carnevali has, in turn, placed Nereo Bonato in charge of technical-sports management until 30th June, 2016. Carlo Rossi is still the club Chairman and has been at the helm since 2004, while Eusebio Di Francesco has been confirmed as the head coach.

Giovanni Carnevali has very clear ideas and an excellent memory when he notes that "we do not want to suffer quite so much next year, in any case Sassuolo enjoyed a record-breaking first season in the top flight. 3.7 million people watched the famous home game against AC Milan (4-3 poker by Berardi) - so Carnevali goes on to say - and the Sassuolo brand appeared 163,000 times on television making 55.7 million Euros. Our international image and visibility have increased exponentially: 74 broadcasters showed our team and the community of Sassuolo, with reports broadcast in 209 different countries in six maxi geographical areas around the world for a total of 624 million contacts".

A great success for a team that was making its debut in Serie A last season and which is still focusing on young players. A policy that might have seemed rather risky and was called into question by disappointing results early in the season, but which, in the end, turned out to be a winning choice.

Eusebio Di Francesco is once again the head coach and he seems quite confident: "This is the team of players I wanted and this month's work will be extremely important; working with over 80% of the full squad already settled gives us an advantage", so the coach claimed. As regards the players, the Italian football defender Paolo Cannavaro was speaking for all the players when, talking about the future of the black-and-greens on the Sassuolo Channel at Mapei Day (see the previous article), he said: "I came to the team in January, the whole team had been changed, it was a rather strange atmosphere, not many of the players knew each other, but now we are tightly-knit unit of people who enjoy being together". The defender has already set his targets for the forthcoming season: "I believe and hope we should carry on from where we left off last season with that same mentality, without fearing anybody. If you do that from the beginning of the season, then you will probably have an easier ride".

Sassuolo will be once again turning to the Mapei Sport Research Centre, as it has done for a number of years, for its scientific support for training, nutrition and supervising medical-sports care, making the most of its latest generation of technological systems. A vital aspect of modern sports that began right on the first day of the training camp, when the players underwent their first medical-sports assessment checks and tests.

**The Summer Schedule**

After the whole team arrived in Bormio on Saturday 12th July to attend the Mapei Day gala dinner, Sassuolo players immediately set off for Malles, the place in Val Venosta valley (Northern Italy) where the green-and-blacks completed the first stage of their training programme.

On Wednesday 16th July there was a friendly match between Sassuolo A and Sassuolo B, while the first proper sparring partner was a local team from Val Venosta in a friendly match held on Sunday 20th that completed the training camp in Malles. From Tuesday 22nd the team began hard training in the familiar setting of Carpineti, in the Province of Reggio Emilia (Central Italy). And Carpineti hosted four of the remaining six summer friendlies for Sassuolo team. The first game, Sassuolo-Castelfranco was scheduled for Wednesday 23rd, while on Saturday 26th and Thursday 31st they plaid against Pontedera and Pro Piacenza. On 2nd August, there was a derby match against Carpi, now a traditional summer fixture for Sassuolo. The first top-division friendly was at Ricci Stadium on 9th August, against Empoli.

Sassuolo also plaid an international match on 14th August against the Spanish team Villareal as part of the 15th Ceramic Trophy being held at El Madrigal Stadium. It might also be called the "ceramic tiles derby", in a certain sense, since Sassuolo and Villareal are the capitals of the ceramics industry in Italy and Spain. This was a first taste of championship standard football, followed by the first match in the Italian Cup on 21st August in Reggio Emilia, and then the eagerly awaited top-flight three-team tournament that Sassuolo won last year: the 14th edition of the Tim Trophy held on 23rd August against A.C.Milan and Juventus, once again housed, as it was last year, at the Mapei Stadium. One week later on 31st August, it was already time for the Italian league championship to begin.

Meanwhile championship fever was mounting and the 2014/2000 season ticket campaign was a real success: after allowing first refusal to the most loyal fans and then four days of free ticket sales, over 7000 people signed up for season tickets.

Everything has begun in the best possible way and the entire club is quietly confident and completely focused.



MAPEI STADIUM
Città del Tricolore

# MAJOR BUILDING WORKS AT THE MAPEI STADIUM

## The restored Città del Tricolore stadium in Reggio Emilia

Major renovation work at the Mapei stadium (also called "Città del Tricolore" stadium) in Reggio Emilia (Central Italy) started this year on the 20th of June. Important work had already been carried out to various parts of the complex last summer: the changing rooms were completely rebuilt and other parts, such as the hospitality area, were completely renovated and redecorated (see *Realtà Mapei International* No. 46). Work continued again with a series of improvements. Part of the work carried out, and which is the one the public will notice most of all, is **the installation of the new giant screen** with its improved visual and audio system, which finally eliminates what is probably the most obvious drawback of the stadium. Work also involved **the completion of the new grass pitch** (see photos on this page) using a special Mapei system with the MAPESOIL technology. The aim was to install a playing surface that is up to the high standards of Serie A and is much more than simple re-sodding work. In fact, the drainage system was completely rebuilt, starting from the sub-base, to create a playing surface that will be able to withstand bad weather conditions much better than in previous years. An **hybrid solution, between natural and synthetic, was chosen for the playing surface**. Beside, **a new heating system was installed** for the pitch. The aim was to complete the work to the pitch in time for the first game in the Italian Cup (21st of August), the Tim Trophy (23rd of August) and, obviously, for the first official league games of the season. Apart from the new giant screen and the pitch, work was also carried out on the floodlights. **The power of the four floodlights was increased and upgraded** to the standards required. At the same time the water channel around the pitch was cleaned and upgraded to improve safety and the surface of **all the damaged concrete was treated and repaired** along with the terraces, the bases for the seats and the steps in the stands. **All the service and public assistance areas were renovated** as well as the pedestrian access areas. And these are only the most important interventions, which transformed the Mapei Stadium into a stadium of excellence, both in sporting terms and in spectator and hospitality terms. Interventions that helped to further strengthen the bond between Mapei and the city of Reggio Emilia and the surrounding area.

**ABOVE.** Images of the work carried out on the pitch at the Mapei Stadium in Reggio Emilia. See the next issues and www.sassuolocalcio.it for more details.

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MAPEI's **lightweight** product

**15 kg = 25 kg**

MAXI RESA YIELD +55%

RISPETTO AI COMUNI ADESIVI CEMENTIZI MONOCOMPONENTI
COMPARED WITH STANDARD ONE-COMPONENT CEMENTITIOUS ADHESIVES

## **Ultralite Flex**, for all your daily tiling work.

One-component, high-performance, lightweight cementitious adhesive with no vertical slip, fair deformability, extended open time, very high yield, good trowellability and excellent back-buttering capacity.

- Up to **55% higher yield**
- **Easier to apply, less effort required**
- **Excellent back-buttering of the tiles**
- **Lighter bags** (**15 kg**)
- **Packaging with practical hand grips** for easier transport and handling
- **Low Dust** technology (the formation of dust during mixing is **considerably reduced**)
- **Quicker application**
- Available in **white** and **grey**
- **Brilliant white**
- **EC1 R Plus**-certified: very low emission level of volatile organic compounds


**25 kg** **only 15 kg!**

*Product certified according to:* EC1 PLUS · CE EN 12004 · C2TE

Product info

facebook/mapeispa

*It is available at Mapei official distributors*

www.mapei.com

MAPEI®

ADHESIVES · SEALANTS · CHEMICAL PRODUCTS FOR BUILDING