



MC aktiv

MAGAZINE

MC-BAUCHEMIE 3-2022

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compatibility for winter
applications and the
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Ladies and Gentlemen,

Shaping the future also means constantly breaking new ground. With the dramatic rise in raw material and energy costs coupled with increasing demands in relation to climate protection and reducing CO₂ emissions, the construction industry is constantly on the look-out for new products and technologies.

In the more than six decades of our existence, we have repeatedly demonstrated our ability to ease the burden on our customers, making their work easier, more efficient and safer with innovations – in industrial, infrastructure and building construction applications, as well as in the concrete industry. The main feature in this, our current issue of MC aktiv, deals with the challenges encountered in the concrete industry, especially in precast plants, and how we help boost efficiency and cost savings with our hardening accelerators.

With a good selection of news items, innovations, inspirational accounts and project reports, we trust that our magazine will once again have plenty to interest you.

Finally, with the season of goodwill upon us, allow me to wish you a joyful and restful holiday period, and health, wealth and happiness for the coming new year!

N. M. Müller

Kind regards,
Nicolaus M. Müller

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The decarbonisation of the production process and the drastic rise in raw material and energy costs are putting concrete manufacturers under increasing pressure, both in the case of winter construction work and in the precast industry. With MC-FastKick hardening accelerators, these businesses can not only cut costs but also save time in production – while simultaneously making a contribution to climate protection.

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MC-SPAIN CELEBRATES 40TH ANNIVERSARY



This "family photo" was taken at the end of the family day in the warehouse of MC-Spain.

On 17 September 2022, the management of MC-Bauchemie Spain invited its employees and their families as well as selected guests to its headquarters in Valencia to celebrate both the 40th anniversary of MC-Bauchemie Spain and the 60th anniversary of the MC-Bauchemie Group.

In his welcoming speech, Carlos Safránez Jr. praised the founders of MC-Bauchemie and Isocron, the original Spanish company with which MC formed a joint venture in 2007 and which was fully acquired by MC in 2011.

The founding fathers realised their dream, were very successful and successfully passed the baton to the second and third generations, who kept the initial flame of the two founders alive. Another dream came true when the two companies merged.

After further interesting welcoming speeches and presentations by Managing Partner Nicolaus M. Müller, Senior Managing Director Carlos Safránez Sen. and IN Sales Manager Pedro Hernández, it was



All guests formed the number "40" on MC's outdoor area.

time to move on to the fun part of the family day. All the guests were put into ten mixed teams, each consisting of different families and, over the next three hours, were required to dance together, fight with plastic axes, play children's memory games, race with a big ball and fight some druids. Great fun indeed!



Read the full news release on our website:
<https://bit.ly/3EyyqCp>



Site opening with traditional German keg tapping ceremony at MC in Malaysia

MC OPENS NEW SITE IN MALAYSIA

Dr. Ekkehard zur Mühlen, Managing Director of MC, and Vincent Loke, Regional Manager for Southeast Asia at MC, welcomed the customers and employees of MC-Malaysia to an Oktoberfest that was all about the mix of cultures and traditions. The celebration opened with the traditional Chinese Lion Dance, which is said to bring success, prosperity and good luck.

New powder and liquid production facilities
In their opening speeches, both expressed their gratitude to the MC-Malaysia team, especially Sylvia Cheong and Justyna Iwanska, who successfully

implemented the project of setting up the new production site during the difficult coronavirus pandemic. The new site consists of a powder production facility for the manufacture of grouts, mortars and concrete additives, as well as two liquid production facilities where concrete admixtures, and reactive resin products and dispersion products are manufactured.



Read the full news release on our website:
<https://bit.ly/3VmcM20>



More than 1,300 years of company service

GRAND GALA FOR 80 LONG-SERVING EMPLOYEES



With the coronavirus pandemic having interrupted the tradition of a December awards ceremony in both 2020 and 2021, the management of MC-Bauchemie took the opportunity this year to invite all long-service awardees who reached their 10-, 25- and 40-year milestones during the period from 2020 to 2022 to a gala celebration, held on 23 September 2022 in the GOP Varieté Theatre in neighbouring Essen. Some 80 employees representing more than 1,300 years of service with the

MC-Bauchemie Group took up the invitation to them and their partners and enjoyed an unforgettable evening with a variety show and a three-course dinner. So well organised and curated was the award ceremony that before the start of the Varieté performance there was even time for a large group photo – one that will go down in MC history.



Read the full news release
on our website:
<https://bit.ly/3zjDN2>





NEW TYPE 1 REPAIR MORTAR

With the new Type 1 potable water mortar MC-RIM PW 111, MC has extended the product portfolio of its MC-RIM PW family for the rehabilitation of potable water tanks. MC-RIM PW 111 is impermeable to water and chloride and outperforms the strict requirements of the DVGW (Deutscher Verein des Gas- und Wasserfaches e. V. - German Technical and Scientific Association for Gas and Water). The new Type 1 potable water repair mortar has a particularly dense structure. The total porosity of approx. 7.4 % after 28 days is clearly below the limit of 12 % set by the DVGW.



Read the full news release
on our website:
<https://bit.ly/3Xu55Tg>



Dr. Iurie Curosu
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NEW ENVIRONMENTALLY FRIENDLY RELEASE AGENT

With Ortolan Extra 795, MC has developed a new concrete release agent that combines good release properties with extremely high environmental compatibility. The wax emulsion cream is solvent-free and label-free according to CLP regulations, and is classified according to GISCODE BTM 01.

Ortolan Extra 795 has the highest DGNB rating of QS 4 related to sustainability. The environmentally friendly concrete release agent can be used on smooth as well as absorbent formwork and ensures smooth, non-porous exposed concrete as well as architectural and structural concrete surfaces.



Find more information on
our website:
<https://bit.ly/3ukirUw>



Dr. Jana Schütten
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Ortolan Extra 795 is versatile and can also be used on OSB formwork.



CLIMATE RENDER

MC's Elegant MRP moisture- and room-climate-regulating plaster/render not only ensures permanently beautiful surfaces, but also combines all the advantages of a lime render with the special pore geometry of a moisture-regulating plaster. It optimally regulates the indoor climate, for example in hotels, kindergartens, schools,

town halls, churches, museums, etc., by absorbing and releasing moisture, thus ensuring a good quality of comfort.



Find more information on
our website:
<https://bit.ly/3OSbBPB>



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“CROM” COURSES 2022

This year's series of courses entitled “CROM - Certified Rehabilitation of Manholes” took place from 10 to 13 October 2022 under the auspices of Prof. Dr.-Ing. Karsten Körkemeyer, Chair of Construction Management and Construction Economics at the Technical University of Kaiserslautern, and was organised together with the ombran department of MC-Bauchemie in Bottrop. A total of 130 specialist application contractors and planning professionals successfully completed this 2022 series of courses, with a “CROM” certificate underpinning their expertise in the field of manhole rehabilitation.



Read more about CROM on our website
(available in German only):
<https://bit.ly/3UfrfzZ>



MC-RockMortar enables sauna emporia, zoo landscapes (top right) and even coal seams (bottom right) to be imaginatively enhanced and authentically recreated.



CREATING NEW WORLDS WITH MC-ROCKMORTAR

Whether in zoos, amusement, theme and adventure parks, hotel lobbies, sauna emporia or wellness oases – everywhere you go you encounter amazingly beautiful backdrops and landscapes with boulders, walls, trees, exotic buildings, temples and sculptures that look deceptively real. Hard to believe that they can all be made with MC-RockMortar modelling mortars from MC-Bauchemie – but it's true. MC-RockMortar unleashes your imagination as you create a world of wonder!

Whether it be zoos in Leipzig, Zurich and Manchester, amusement, theme and adventure parks in Germany, Poland and Malaysia, or even sauna emporia and wellness oases around the world – the list of references involving the MC-RockMortar product family is long indeed. When it comes to recreating landscapes, imaginative buildings, backdrops and sculptures, MC-RockMortar offers unbeatable quality and choice for impact and authenticity.

The product family comprises the three microsilica-modified modelling mortars – MC-RockMortar H, HS and L, all of which can be easily applied by hand or by wet spraying for everything from coating to delicate sculpting work. MC-RockMortar H and HS are each classified as R3 mortars according to

EN 1504 Part 3. That means they can also be used in areas subject to static mechanical stress. Supplementing these, MC-RockMortar L has been formulated as an R1 mortar for non-structural and cosmetic work. MC-RockMortar HS offers a high resistance to carbonation and both MC-RockMortar HS and L also exhibit high sulphate resistance.

Broad application versatility

All three mortars are impressively resistant to high temperature, frost and de-icing salts and are also available in different colours. The application possibilities are therefore incredibly wide-ranging. And with aesthetics invariably also an important consideration, it's good to know that with MC-RockMortar both the contours and the colourful richness of landscapes and buildings can be replicated with amazing accuracy.

Even the ageing process occurs as in the real thing. This is because the mortar formulations include calcium carbonate which sustains algae and weathers like sandstone, giving it an even more authentic look after, say, three years than when the replica or artefact concerned was first created.

Moreover, MC's sculptural mortars are also ideally suited for the restoration of old buildings. With the help of the matrix technique, any structure and texture can be created, from wood look to masonry. And when it comes to reprofiling façades and decors, the spray mortar offers an excellent choice for both indoor and outdoor applications.



Got a project where this
could be of interest?
<https://bit.ly/3GPBopX>





FAST, FASTER, MC-FASTKICK BOOSTING CONCRETE COMPATIBILITY

The 27th World Climate Conference, which took place from 6 to 18 November 2022 in Sharm El-Sheikh, Egypt, served to further increase the pressure on the international community to intensify its efforts in the fight against global warming. And the construction industry is no exception, having to meet expectations for comprehensive measures to reduce greenhouse gas emissions. The process of decarbonisation has also already been initiated by cement and concrete manufacturers, for instance through the development of clinker-reduced cements and CO₂-reduced concretes. These can be produced or applied just as well as their conventional counterparts, provided that they are combined with modern concrete admixtures. MC-FastKick hardening accelerators, a family of products offering many advantages in terms of speed, cost savings, processing and application, are particularly effective in this domain, offering real benefits to the precast industry, in winter construction work, and also in ready-mix concrete production.



Hardening accelerators also ensure high early strengths and shorter curing times in winter construction.

With the Paris Climate Agreement, adopted in December 2015 and ratified by almost 200 countries to date, many of the world's nations committed themselves under international law to limiting global warming to 1.5 °C above pre-industrial levels, and to continuously reducing national greenhouse gas emissions.

The long-term goal is to achieve climate neutrality in the second half of this century. In Germany, according to a resolution passed by the federal government, the date set for this objective is actually 2045. But this demands a lot from industry, especially since the underlying conditions have become much more difficult in the past three years in the wake of the global coronavirus pandemic and, not least, due to escalating price



“Precast concrete manufacturers are also increasingly focusing on products with which they can reduce their CO₂ emissions, not least due to pressure coming from construction industry clients. So they too are putting their faith in MC-FastKick products – working well with clinker-reduced cements, they enable faster curing and extensively avoid the need to use heating chambers, so significantly reducing energy costs.

Stefan Hettwer
Area Manager CI, Rhine-Main Region

increases following Russia's attack on Ukraine, an act that contravenes international law.

Ways to cut CO₂ emissions

Not all areas of industry are equally challenged. It is no secret that companies that cause particularly high CO₂ emissions due to their production activities are facing an especially difficult task. Included in this group are cement manufacturers, because the calcination process required to produce Portland cement clinker is still responsible for a large portion of global CO₂ emissions, not least because the manufacturing process is particularly energy-intensive.

Even if the process could be based entirely on renewable energies, the deacidification of the limestone during the calcination process still releases a significant amount of CO₂. One possible partial solution lies in the use of clinker-reduced cements, which have been entering the market in ever-increasing volumes for some time now. These do indeed have a significantly lower CO₂ footprint – but they also change the properties of the concrete. But – as we reported in MC aktiv 3/2021 – the use of special concrete admixtures goes a long way to compensating for such effects.

Challenges facing precast concrete producers

For precast concrete producers, the use of clinker-reduced cements in their concrete formulations poses certain specific challenges: The process of early strength development is retarded, thus lengthening the demoulding or stripping time. This longer occupancy of the formwork means lower output of precast concrete goods and components, which in turn leads to a reduction in yield and profitability. But concrete formulations with CEM I cements also pose further challenges for precast manufacturers against the background



“With our own production facility in Ireland, we are able to manufacture products that are ideally adapted to the cements and fillers commonly used in this country. Our customers appreciate MC-FastKick because it helps reduce energy consumption in their heat chambers, the concrete needs less time in the moulds or forms, and the required strength level is achieved faster. All this reduces costs.”

Steve McCormack
Managing Director of MC-Building Chemicals Ireland

of rapidly rising raw material and energy costs. The early strength of precast concrete goods is often accelerated by heating the concrete, even when CEM I cements are used, e.g. with heated moulds, fan heaters or heating chambers. However, this requires a large amount of thermal energy – an enormous cost driver given the current dramatic increase in energy prices. Moreover, price increases of around 40 to 50 % have already been announced for cement as of the beginning of 2023. Conventional manufacturing processes are thus becoming so cost-intensive that any scope for optimising production must be worth examining for any company wishing to remain competitive in this field.

Cost-cutting rethink required

“The biggest challenges occurring in the precast market at the moment relate to the ever-rising cost of cements and GGBS (Ground Granulated Blast-furnace Slag) fillers. Both products have increased in price by approximately 50 % in Ireland in the course of 2022,” notes Steve McCormack, Managing Director of MC-Building Chemicals Ireland. “Energy costs have also risen dramatically, and burgeoning fuel prices have in turn caused transport costs to rise very sharply.” So, in order to prevent prices from exploding out of control, new ways of cutting costs in production are needed – including the use of modern concrete admixtures from MC-Bauchemie such as those of the MC-FastKick product family. This new generation of hardening accelerators not only ensures shorter curing times in winter construction, but also greatly reduced cycle times in the precast plant.

Faster form stripping with MC-FastKick hardening accelerators

With MC-FastKick, MC-Bauchemie has developed a completely new product family of hardening



MC-FastKick also offers many advantages in winter construction: in addition to improved liquefaction and extended slump retention, users see a very strong acceleration effect with faster curing than with conventional concrete formulations.

accelerators in which CS phases are stabilised with polycarboxylate ethers. This idea, based on a patent from MBCC, has been refined with the latest MC polymer technology, ensuring effective initial slump retention and accelerated hardening of the concrete as well as raising the concrete's performance up a class.

MC-FastKick products enable high early strengths by inducing a mechanism that considerably accelerates the curing process, while also imparting to the concrete very good workability properties. This is also confirmed by Martin Struk, concrete expert in the Concrete Industry (CI) division of MC-Slovakia: “We are currently using MC-FastKick with four customers and consider it to be the best accelerator around. Only with MC-FastKick can we achieve a strength level of 30 N/mm² after 7.5 hours. We also get a better stripping result and much nicer concrete surfaces.”

The special PCE polymers that MC has developed for MC-FastKick exert a positive effect on the crystal growth of the calcium silicate hydrate phases in the concrete. This leads to a significant higher in the crystallisation rate and thus to substantially higher early strengths without negatively influencing the other concrete properties. MC-FastKick is thus not only suitable for use in precast plants, but also wherever curing times need to be shortened.

Fast curing for CEM I, II and III

The acceleration effect is largely dependent on the reactivity of the cement type used. Vicente Diago, CI concrete technologist at MC-Bauchemie Spain, comments: “Cement manufacturers are trying to switch from type I cements to more environmentally friendly cements, which leads to longer formwork stripping times due to the lower

initial strengths. Keen to compensate for this negative effect, concrete manufacturers are showing great interest in our MC-FastKick accelerators.” The period of maximum acceleration effect is in the range of six to twelve hours for CEM I, roughly eight to 16 hours for CEM II and approximately ten to 20 hours for CEM III.

Numerous benefits for precast concrete producers

Precast plants that use their formwork two to three times, i.e. produce around the clock, either heat their formwork or use heating chambers to accelerate curing. Using MC-FastKick hardening accelerators means heating temperatures – and therefore energy costs – can be reduced. These admixtures also offer another positive side effect: The PCE technology incorporated in the formulation gives rise to a tangible improvement in liquefaction and improved slump without affecting the stiffening behaviour. This means that the amount of superplasticiser or the water content can be reduced, in turn helping to further cut costs and protect the environment.

MC-FastKick hardening accelerators thus enable concrete producers from both the precast and ready-mix concrete industries to produce faster and more flexibly, with output increasing and production costs decreasing. Last but not least, these manufacturers are immediately put in a position of being able to better meet their CO₂ reduction targets. A real win-win situation for manufacturers, consumers and – not least – the environment.



“The reduction in CO₂ emissions is a must for the cement industry. At the same time, this incessant upward trend in energy prices is a major challenge facing the concrete industry. So it is hardly surprising that MC-FastKick is increasingly in demand. In the past, it was primarily our precast customers operating in cool regions, essentially northern Spain, who showed the most interest in the product family. Now we are finding there is demand in all our regions. Our customers are very impressed with MC-FastKick, and especially the advantages it offers when used with the newer cements.”

Carlos Safránez Jr.
Managing Director of MC-Building Chemicals Spain



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ECO-AUDIT SUCCESSFULLY COMPLETED



The brochure is only available in German.



Find more information here:
<https://bit.ly/3U5iiyQ>



MC has once again participated in the EMAS eco-audit conducted by an EMAS-licensed environmental verifier as per the relevant European standard, and has been additionally certified according to ISO 14001. MC's current environmental statement provides information on site-specific environmental indicators, environmental goals and the measures planned or instituted to achieve them. The declared objective of MC's quality and environmental management regime is to drive sustainable growth through advancements in quality, environmental performance and occupational health and safety, coupled with increased cost-efficiency aligned to achieving continuous improvement in the company's financial performance.

SUSTAINABLE EFC CONCRETE

EFC or "Earth Friendly Concrete" is a joint development of the company WAGNERS of Australia, and MC-Bauchemie. It is a cement-free formulation that offers both total sulphate resistance (XA3) and a high level of resistance to acids.

A sulphate attack actually has an additional strengthening effect on this cement-free concrete, also called geopolymer concrete, leading to a further increase in its resilience. It is therefore ideal for use in structures that are exposed to elevated chemical attack. MC offers activators for EFC

concrete which, together with a newly developed polymer, ensure that the binders in the form of ground blast-furnace slag and fly ash used instead of cement, are alkaline-activated, causing them to harden in the concrete mix. EFC concrete is also being used for the first cement-free concrete sewage pipes to appear in Germany; these have recently been launched onto the market under the name "next. beton". Not only are they highly resistant to sulphates and chemical attack, but they are also significantly more climate-friendly than plastic or conventional concrete pipes, as up to 70 % less CO₂ is emitted in their production.



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KUALA LUMPUR INTERNATIONAL AIRPORT 2 TAXIWAY LIFTED AND CONSOLIDATED WITH MC-MONTAN INJEKT



39 concrete slabs were consolidated using MC's injection technology, with four more being lifted and stabilised.

Scheduled for completion by June 2022, improvements had to be made to a taxiway serving the two runways of Kuala Lumpur International Airport 2 (KLIA2). Thanks to MC's innovative injection technology, the necessary work was carried out in record time.

Located in the Sepang district of the state of Selangor and serving the Malaysian capital, Kuala Lumpur International Airport 2 (KLIA2) was built as a next-generation international air transport hub, providing seamless connections within Malaysia for local and international low-cost and full-service airlines.

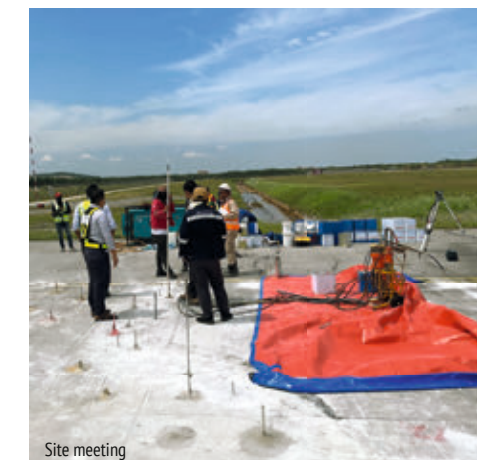
A new departure for MC

On Taxiway Y9, via which aircraft access one of the two runways, an area of more than 1,000 m² having suffered damage from the heavy loads endured, needed to be repaired. For this, the subsoil under 39 concrete slabs had to be stabilised. Another four slabs had sunk and needed to be lifted by about 20 mm.

Shamsul Ahmad, MC's chief engineer in Malaysia, was able to convince Teras Budi Resources, which was commissioned with the planning and construction work, as well as its consulting firm LR Two Consult, of an innovative MC method that was available. Instead of conventional compaction of the subsoil and mechanical lifting of the slabs, two powerful products from the MC-Montan Injekt series were injected through the concrete slabs into the subsoil.

MC-Montan Injekt – the innovative system for consolidating and lifting concrete slabs

MC-Montan Injekt CB is a silicate-based injection resin that has special properties for the consolidation and lifting of concrete slabs and is specifically suitable for the controlled lifting of floor slabs. The low-viscosity durometer resin has a high compressive and tensile strength and is both permanently watertight and harmless to groundwater hygiene. With it, the affected area comprising four concrete slabs of 5 x 5 m each was successfully lifted by 20 mm.



Site meeting

In sealing and consolidating the subsoil under the 39 concrete slabs with a total area of 975 m², MC-Montan Injekt FN was able to prove its special properties as a means of increasing load-bearing capacity and consolidating subsoil under floor slabs. The soil was stabilised and the slabs of Taxiway Y9 aligned in accordance with the guidelines of the International Civil Aviation Authority (ICAO). Emckrete CR 80 was then used to repair defects in the reinforced concrete of the slabs.

A highly efficient solution with a perfect finish

At KLIA2, the innovative system comprised of the MC-Montan Injekt product family once again proved to be a highly efficient solution. The work started on 24 May 2022 and was successfully completed in record time on 22 June 2022, i.e. after just one month, whereas it would have taken around six months using conventional methods.



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MONOLITHIC CONCRETE SLAB LAID UNDER TROPICAL CONDITIONS TOYOTA CAR SHOWROOM IN VIETNAM



Due to the high temperatures during the day, the concreting work had to be carried out at night.

A project in Vietnam required a floor area of 3,000 m² to be cast in a single pour for the showroom of a car dealership of the Japanese Toyota Group. To achieve the desired long slump retention at elevated temperatures as well as a robust and low-shrinkage concrete at the end, the clients put their faith in MC-PowerFlow 2257P, a high-performance PCE-based superplasticiser from MC.

The Châu Thành district in Vietnam is located only a few kilometres southwest of Ho Chi Minh City in the province of Ben Tre, where the Viet-

namese subsidiary of the Toyota Group had built its showroom. The design called for the entire floor slab of the 3,000 m² building to be cast in a single pour.

Challenge of super-long slump retention

The job required over 1,300 m³ of concrete. This was a challenge not only because the concrete had to be transported over a long distance from the ready-mix plant of the Phu Thanh Company to the construction site, but also because of the high temperatures common to the south of Vietnam.

Thus a concrete workability time of up to 6 hours was deemed necessary to ensure successful installation.

MC-PowerFlow – the chemical trouble-shooter par excellence

The MC specialists recommended the use of the high-performance superplasticiser MC-PowerFlow 2257P, a product manufactured by MC-Bifi Bauchemie JSC in Vietnam. It ensures long-lasting slump retention combined with good stabilisation of the concrete, yields high water savings and can maintain very good flowability for hours – even at elevated temperatures and in sunshine. Thus good workability with high compaction are invariably achieved, despite such thermal and climatic challenges.

More sustainable concrete saves time and money

And there was another product benefit that proved attractive to the client and the ready-mix plant in equal measure: With the help of MC-PowerFlow 2257P, it became possible to increase the proportion of fly ash in the concrete mix design by up to 40 % this resulted in significant cost savings, since the price of fly ash in Vietnam is 50 USD lower than that of cement. Further advantages resulting from the more sustainable – i.e. CO₂-reduced – concrete lie in its greater degree of water impermeability and its lower shrinkage ratio, making the floor much less prone to cracking. Thus all the strengths offered by MC-PowerFlow 2257P came very much to the fore, allowing the floor slab – despite the difficult climatic conditions – to indeed be successfully cast in a single pour as specified.

STAND-OUT SURFACE PROTECTION

Located in the Slovakian town of Krompachy, the 201 m high chimney of a foundry was in dire need of repairs to its outer shell. Fog together with the general cold and damp autumn weather put man and material to a tough test. But it was precisely in these adverse conditions that the products of the MC-DUR system were able to show their strengths. And while these ensured that the concrete surfaces of the chimney were comprehensively repaired and durably protected, stripes of MC's special sealant MC-DUR 2496 CTP were also applied as striking red and white flight safety markings at the upper levels of the chimney.



View of the repaired chimney in Krompachy



You will find a more detailed project report on our microsite:
<https://bit.ly/3H684vv>



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MANDARIN ORIENTAL PROJECT IN TEL AVIV PERMANENT CONSTRUCTION PIT WATERPROOFING WITH ADVANCED INJECTION TECHNOLOGY



View of the construction pit in Tel Aviv

A luxury residential and hotel complex consisting of two towers, each 25 storeys high, is currently being built in Tel Aviv. Due to the very high groundwater level, there were repeated water ingresses into the construction pit, so it had to be made watertight – with MC's permanently flexible sealing injection products providing the solution.

Located on the Mediterranean coast, Tel Aviv is the economic and cultural centre of Israel and is regarded as the most vibrant city in the country. Directly on the beach promenade, a particularly exposed construction project is currently being implemented by the Hong Kong-based Mandarin Oriental Hotel Group, which operates luxurious hotels, resorts and residences in the most beautiful places in the world.

Prestige tower complex in Tel Aviv

The Mandarin Oriental Tel Aviv project comprises two 25-storey towers. One is planned as a luxurious residential block with 230 apartments, the other as an equally luxurious hotel offering 227 rooms. There are also plans for the provision of commercial space below the residential tower. In the immediate vicinity are some of the most attractive districts of the metropolis, including the shopping mile Neveh Tzedek, Old Jaffa with its rich traditions, and the famous Rothschild Boulevard.

Water penetration problem

Excavation and stabilisation of the soil began back in 2020. The water table, which is very high in Tel Aviv, posed particular problems in the early construction phase, with water penetrating the 15-metre-deep excavation pit, making it difficult

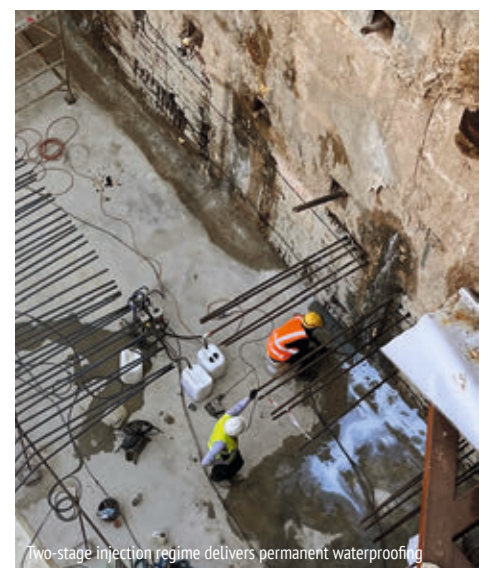
to build the slurry cutoff walls. Commissioned to build the towers, Israel's leading construction and infrastructure company Solel Boneh Building and Infrastructure Ltd., turned to A.Z. Marketing, a long-standing cooperation partner of MC in Israel, to find a solution to the problem.

The answer: two-stage injection

After the specialists from A.Z. had inspected the construction site and gained a picture of the necessary waterproofing measures, they recommended stopping the water ingress with a two-stage injection system devised by MC. And to ensure that the materials were professionally applied, the contracted application team was first jointly trained by A.Z. and MC.

Permanent waterproofing

The first sealing measures were then carried out with the fast-foaming, single-component injection resin MC-Injekt 2133 combined with MC-Injekt 2133 flex, a highly flexible and effective water-stopping injection resin. In places where the injection materials did not provide a solution because there were problems with the concrete, the slurry walls were repaired with cementitious materials. This resulted in the water ingress being kept at bay until the foundation soil could be prepared.



Two-stage injection regime delivers permanent waterproofing

Only then was the construction pit fully waterproofed across its entire expanse. This was done using MC-Injekt GL-95 TX, a swelling, flexible sealing acrylate gel that can be injected into concrete and masonry as well as into foundation soil. MC-Injekt GL-95 TX impresses by virtue of its very good injectability, regulated reaction times and readily controllable injection paths. Thanks to its high elasticity and good swelling capacity, the hydrogel provides a secure seal and is permanently watertight in moist media. Thus, the experts from A.Z. and MC were able to solve the problem with a sustainable solution, allowing the construction work in Tel Aviv to continue to plan.



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HIGH-BAY WAREHOUSE KEPT AT FULL FLOW

REFURBISHMENT OF INDUSTRIAL FLOOR WITH OPERATIONS ONGOING

Performing industrial floor repairs with operational activity continuing uninterrupted presents a special challenge to any applicator. And this was certainly the case when it came to refurbishing the floor in a high-bay warehouse located in the canton of Aargau in Switzerland. Here, not only was a high level of logistical competence required, but also a wide range of easy-to-apply and fast-curing industrial floor coating systems – all supplied by MC.

The highly stressed and heavily worn floor of a high-bay warehouse operated by an industrial manufacturing company was long due comprehensive repair. And the project entailed a good degree of cross-border European cooperation, with sales colleagues from MC-Germany and MC-Switzerland collaborating with chosen contractor Strabag AG, a leading European construction group that is also active in the "Alpine Republic". MC's experts were involved in the solution-finding work from the very beginning of the planning phase. They were able to recommend the fast industrial flooring system MC-DUR TopSpeed for a large portion of the areas requiring a refurb, and the OS 8 coating system MC-DUR 1322 for a vehicle parking bay.

Implementation without operational disruption

The biggest challenge was that the floor area, which was divided into several zones and covered a total of around 7,500 m², had to be repaired with the storage and retrieval (S/R) operations ongoing. This demanded from all involved effective implementation concepts based around

an ingenious logistical masterplan. The Strabag team also had to be trained by MC-Bauchemie in the use of the product systems in order to ensure that all work proceeded smoothly once it was set in train.

Top results with MC-DUR TopSpeed

The Strabag team first started with the main task: the repair and coating of the hard concrete over an area of 4,900 m² in the high-bay warehouse. This hard concrete exhibited extensive cracking, with voids apparent in a number of zones. And the fact that the work had to be carried out in numerous stages so as not to interfere with the ongoing operation of the high-bay warehouse added a further degree of difficulty.

Hence, all parties involved opted for an industrial floor structure based on the high-performance coating system MC-DUR TopSpeed. This allows industrial floors to be built up particularly quickly, with full service loading possible after just a few hours. In addition to accelerated curing, which occurs largely independently of weather and en-

vironmental conditions, MC-DUR TopSpeed is impressively easy to apply and scores high in terms of abrasion and scratch resistance. In addition to speed and reliability, the system offered a further plus in this project in that the required conductivity of the floor could be verifiably achieved by merely scattering a layer of conductive sand, thus eliminating the need for either a conductive primer or an antistatic top seal. Subsequently, MC-DUR TopSpeed was also applied to the lift forecourts and storage areas, covering a floor area of a further 1,200 m², and also in a loading bay over an area of 300 m².

Floor structure for a vehicle parking bay

Last on the agenda was coating work in a 1,000 m² storage hall that was to be converted into a car parking bay for future use. Here, in accordance with the new usage profile, the fast-curing, high-strength industrial floor covering MC-Floor Screed 10 was first applied over the entire surface to be upgraded. This was followed by scratch and cavity filling with the highly fillable epoxy resin MC-DUR 1320 VK and quartz sand. The floor finish took the form of a top seal with MC-DUR 1322, a product that offers very good abrasion and chemical resistance.

The MC product systems not only ensured a visually and technically sophisticated outcome, but also contributed to the time and cost savings achieved by virtue of the fact that the warehouse remained fully operative throughout the refurb work.

DURABLE PROTECTION FOR EUROPE'S LARGEST LIQUEFIED GAS TANKS LPG TANKS IN ANTWERP



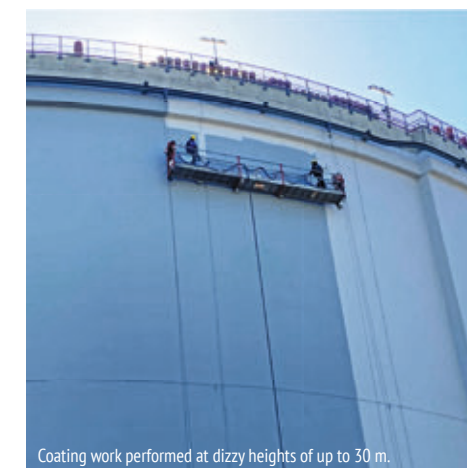
Two of the giant LPG tanks had their exposed surfaces upgraded with concrete repair and protection products from MC.

The Belgian metropolis of Antwerp boasts Europe's largest liquefied gas tanks. In 2022, the concrete surface of two of these storage vessels, which only went into service in 2020, was earmarked for smoothing and the application of a durable surface protection coating – a project that placed high demands on MC and all companies involved in the undertaking.

Between 2018 and 2019, two new concrete liquefied gas storage tanks, each with a height of 30 m and a diameter of 84 m, were commissioned on the site of Oiltanking Antwerp Gas Terminal N.V. located west of the Antwerp port facilities. The operating company ADVARIO sent out a tender for both tanks requiring 5,500 m² of roof surface, 9,000 m² of wall surface and a 740 m² floor slab to be refurbished and durably protected. Ghent-based technical surveillance inspectorate Ganicor drew up a tight schedule envisaging implementation from May to the end of October 2022. The contract was awarded to the company De Medts of Wijnegem, whose bid – following thorough consultation with MC-Belgium during the tendering phase – was based entirely on the application of MC products.

Safe and secure concrete upgrade with Nafufill products

The surface refurbishment of the concrete LPG tank surfaces was performed with products from the Nafufill range, such as the concrete replacement products Nafufill KM 130 and 250, both of which offer proven high-quality, having already been used over many years for both structural and non-structural repair applications. They offer very good workability and excellent durability and impermeability performance values. The fine



Coating work performed at dizzy heights of up to 30 m.

protects the concrete by inhibiting carbonation. MC-Color Flex pro, a product from MC's modular MC-Color surface coating range, was used for the tank walls. As a pigmented, particularly flexible coating for outdoor surfaces exposed to the elements, it combines optimal application properties with very good technical performance characteristics in relation to concrete surface protection, colour design and crack-bridging. For the protection of the floor slab, the choice finally fell on Zentrifix F 92, a crack-bridging polymer-cement mixture that is chloride-proof, open to water vapour diffusion, retards carbonation and requires no curing treatment.

filler Nafufill KM 103 was then used for levelling and smoothing the repaired surfaces to provide the ideal substrate for subsequent surface protection with MC-Color Flex pro.

Smart MC solutions for surface protection and waterproofing

The roof areas were then coated with the highly flexible and bitumen-free reactive sealant MC-Proof eco as the surface protection. This high-performance product is quick-drying and offers high UV and ageing resistance as well as an excellent crack-bridging capability. It also

Thanks to the sound advice provided by MC, augmented by regular, constructive exchange between all parties involved, the project was completed as scheduled in October 2022, despite all the significant challenges encountered.



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PORTRAIT



KAI SCHAREINA, FROM APPRENTICE TO HEAD OF HR

Kai Schareina (52) has been working for MC for over 33 years and has now taken on the role of Head of Human Resources (HR) as of 1 January 2022. In a transitional phase until the middle of this year, he was still in charge of the Group Controlling team in a dual function; he is now devoting all his energies to his tasks in the HR division. A career with unusual twists and turns.

From 1989 to 1991, Kai Schareina completed an apprenticeship as an industrial clerk at MC, at the same time taking a business management degree at the Academy of Administration and Economics in Essen. He then joined MC's accounting department where he initially worked as a ledger clerk. In 1994 he switched to financial control after completing an MBA course for which he studied in his spare time. In the Financial Control department he experienced first-hand the rapid development of MC from a primarily national player to a globally active company. Providing essential accountancy and financial control services, Kai Schareina looked after the companies in Western Europe and Latin America, among others. In 2018, he took over the management of Group

Controlling with the aim of establishing a modern international reporting system.

A soft spot for numbers, people and languages

The young Schareina had a soft spot for numbers, people and languages. This was evident from the beginning of his professional career at MC. When it became apparent in the context of MC's Agenda 2030 that a central HR function was to be established, he was very keen to be considered and when asked if he could imagine assuming the role of Head of the HR department, he immediately said yes. "Through my international accountancy work and my travels to the various MC sites around the world, I have seen how many good colleagues work at MC, how positive it is

to offer targeted support and a positive working environment, and how important it is to have the right employees in key positions," explains Kai Schareina. So he is particularly pleased to be able to dedicate himself to the associated tasks. He has extensive experience in a wide range of areas at MC, has a great affinity for HR issues and is highly valued by many co-workers, both nationally and internationally, as a contact person and colleague. He also shows great openness when it comes to considering new ideas and approaches, has a very good international network within the MC group of companies due to his work in international Group Controlling, and has a great understanding for other cultures. We wish him continued success as Head of HR!

INTRODUCING: SAKI M. MOYSIDIS

FROM PR MANAGER TO HEAD OF INTERNATIONAL MARKETING

Born in Bochum, Saki M. Moysidis (49) has been with the company since 1 November 2012, and recently celebrated his 10th anniversary as an MC employee. The father of three children started his career at MC as PR Manager and has been in charge of public relations, online communication, the MC aktiv magazine and internal communication throughout these first ten years. In 2021, he was promoted to Head of PR & Communication and took over as Head of International Marketing & Communication as of 1 July 2022. After his studies, the history graduate worked for a full-service communications agency for five years and then enjoyed seven years in the marketing department of an auditing and consulting company. Looking forward to developing his role, Saki Moysidis will be dedicating his efforts to the management of international issues and projects, focussing on PR and internal communication, online communication, MC aktiv and cooperation with the international product line management. His hobbies include football, fitness training, cycling, cooking and travelling.



*We wish him
continued success!*

MC-GERMANY ASSIGNED ITS OWN MANAGEMENT TEAM



The Management Committee of MC-Germany (from left to right): Roland Schepers, Dr. Christoph Schüle, Anja Spirres, Dirk Bente and Dr. Detlef Wolf.

In recent years, MC has embarked on the path of decentralisation and strengthening the independence of the national companies in order to align our range of services even more closely to local customer requirements. In this context, adjustments have also been made to the global, regional and national organisation. Recently, a separate Management Committee was introduced for MC-Bauchemie Germany, and the team has been managing the affairs of the German business with far-reaching responsibilities since September 2022.

The MC-Germany Management Committee consists of five officers, four of whom have been working successfully for MC for many years and all of whom have many years of experience in their areas of responsibility. Anja Spirres heads the Infrastructure & Industry division, Dr. Christoph Schüle the Concrete Industry division and Dirk Bente the Finance & Accounting division. The aforementioned trio were joined on 1 September 2022 by Dr. Detlef Wolf, who has taken over the management of the Operations division (production, engineering, logistics, purchasing). He also has many years of experience in similar positions and most recently worked for an internationally active membrane manufacturer. Roland Schepers completes the management team of MC-Germany. The merging of MC with Botament and Ultrament will be among the first

major issues that the new committee will need to tackle. Both sister companies will continue to be managed by Roland Schepers.

Official start on 1 January 2023

"The aim of this new structure is to create a powerful management team that can concentrate fully on our day-to-day German business while acting independently and with agility. In this way, we also want to speed up the decision-making processes," state the two managing directors of the MC-Bauchemie group of companies, Dr. Ekkehard zur Mühlen and Nicolaus M. Müller. With the period through to the end of 2022 having been used as a transitional phase to gradually transfer responsibility to the new Management Committee in Germany, the quintet will take over the business in Germany completely on 1 January 2023.

PERSONNEL NEWS



HERVÉ PERRET DU CRAY (58) has taken over as Managing Director of MC-Bauchemie in France as of 1 March 2022. The graduate civil engineer has many years of experience in sales and commercial management. For five years, he tackled the task of building up the business of a manufacturer of roof waterproofing products in Africa and, latterly, spent more than eleven years as manager of the roof waterproofing products division of an internationally active membrane manufacturer. Now responsible for MC's business in France, he will be aiming to increase MC's national market share there while also further improving operational profitability.

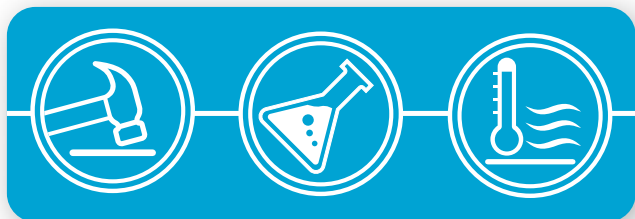


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