

Realtà MAPEI

NORTH AMERICA



ISSUE 29

Concrete and coatings star at the Met • 2019 trade shows • MAPEI and the Gary Sinise Foundation • Vertical repairs simplified

Steady strides



Luigi Di Geso
President and CEO,
MAPEI North America

We are making steady strides as we progress into the second quarter of 2019. We have just finished a strong show season, beginning the year with the World of Concrete and SURFACES shows at opposite ends of the Las Vegas strip. At both shows, our booths were unmistakable. Video screens projected our demo teams as they engaged with the crowds, explaining our new innovations and drawing people in to learn about MAPEI.

At the World of Concrete, we demonstrated our *Elastocolor* coatings family. This product family is also highlighted in this issue's cover story,

MAPEI's role in renovating The Met Philadelphia. As you will discover from the article, we developed ***Elastocolor® Texture*** as part of the solution for the project.

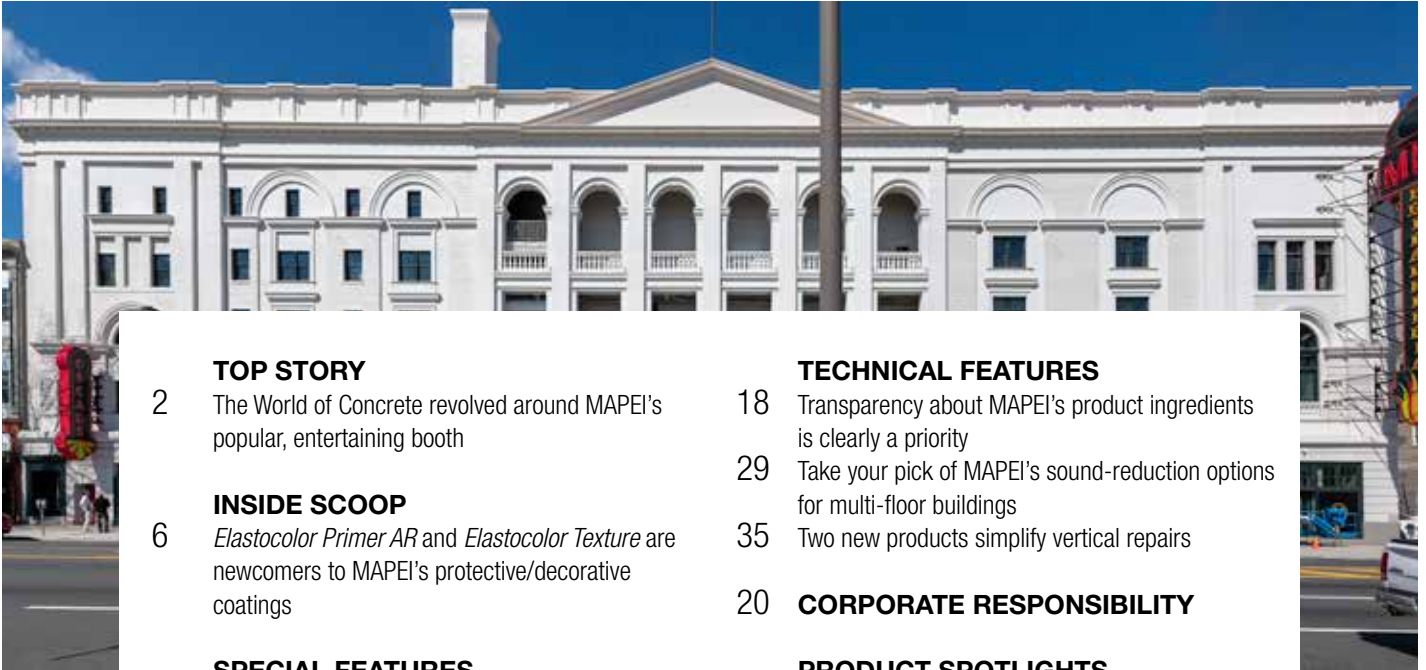
At SURFACES, among the variety of products we demonstrated was one of our consistent favorites, ***Ultracolor® Plus FA***. This grout features heavily in this issue's project reference describing MAPEI's involvement in the restoration of a historic Southern California swimming pool. The pool project also used one of our newer products, ***Planitop® 330 Fast***, which saved the GC considerable time and money when a problem arose toward the end of the project.

Providing solutions and driving innovation are part of MAPEI's power. Whether our employees are in Research & Development, Sales or Accounting; whether they design the bags and containers or actually fill them with product – no matter what their titles are – if they work for MAPEI, they have a vital role. It is up to each of us at MAPEI to make sure that we are always looking for ways in which to improve, always striving for ways to progress, learning new skills, and becoming faster and more knowledgeable. This enables us to maintain our industry-leading edge. As we learned at the recent shows, MAPEI is still the industry leader, but there is always room for growth. We never stop moving forward. Together, our employees are the power of MAPEI.

Sincerely,

A handwritten signature in black ink, appearing to be 'Luigi Di Geso', written over a horizontal line.

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ON THE COVER

Bringing The Met Philadelphia back to life

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DEMO DOMINATION

The World of Concrete revolved around MAPEI's popular, entertaining booth

More than 60,500 industry professionals from around the world attended the 44th annual World of Concrete (WOC), which was held at the Las Vegas Convention Center, from January 22 to 25. The event featured 1,500 domestic and international companies exhibiting across more than 776,800 square feet (72 167 m²) of combined space. "This year has been our largest in 10 years," said Jackie James, Group Director for World of Concrete, "and proves that the construction sector is strong globally."



Show-and-tell demos

With emcee Kevin O'Connor enticing the crowds to the booth with his familiar banter, the MAPEI demo team – led by Andrew Fulkerson, CRS Technical Services Manager, and Rankin Jays, Coatings Business Development Leader – put on quite a show this year. Product demonstrations included:

1. Horizontal resurfacing: Using **Mapecem® Quickpatch**, **Concrete Renew™**, **Mapefinish™ Wet Look** and stencils, the team turned worn yet structurally sound concrete into a patterned “stamped” overlay.
2. Corrosion protection: Using **Mapefer™ 1K** and **Mapeshield™ I** galvanic anodes, the team demonstrated MAPEI's perfect solution for stopping corrosion on existing carbon steel rebar. During the demo they also discussed the benefits and features of other corrosion-inhibiting products, including **Mapeshield CI 100** and **Planibond® 3C**.
3. Vertical repair: The team demoed two repair options:
 - o **Planitop® VO** with **Planicrete® LA** was applied over the **Mapeshield I** galvanic anode from the corrosion protection demo.
 - o **Planitop 12 SR** was applied over the **Mapefer 1K** from the corrosion protection demo.

4. Waterproofing: The team applied the **Planiseal® CR1** system over a plywood substrate to demonstrate the ease of application and lack of odor.
5. High-performance coatings: The **Elastocolor** demonstrations were designed to be a “demo with a difference,” featuring speed painter Tim Decker rather than a traditional product application. Not only entertaining, the nontraditional use of the coating demonstrated the products' ease of use, hiding power and customizable color reproduction. Before the paintings were raffled off, Jays and O'Connor discussed the coatings' features and benefits. Portraits painted over the course of the trade show included Albert Einstein, John Lennon, Marilyn Monroe, Muhammad Ali, Mick Jagger, Prince, Frank Sinatra, Ray Charles and Bruce Springsteen.





Booth emcee Kevin O'Connor

Kevin O'Connor has hosted "This Old House" on PBS since 2003. He first caught the producers' attention when he and his wife, Kathleen, appeared on an episode of "Ask This Old House" needing help in removing wallpaper. That wallpaper-removal project has led to a career for O'Connor that also includes hosting duties on "Ask This Old House" and "Inside This Old House," as well as a position on the editorial board of *This Old House* magazine.



In the South Hall, it was impossible to miss the MAPEI booth.

Filled with innovative products centered around a demonstration stage, MAPEI's two-story booth – measuring 40 x 90 feet (12.9 x 27.4 m) – dominated the convention floor. The booth combined both MAPEI and MAPEI/GRT in one space, providing a unified location for guests to learn about a wide array of products. And those industry-leading products were demonstrated in a unique manner that had people filling the booth and the aisle.

This year, MAPEI's product demonstrations were emceed by Kevin O'Connor, the host of the award-winning home-improvement television show "This Old House." O'Connor interacted with the MAPEI team and with the gathered crowd, asking questions about the products in an engaging, thoughtful manner that drew people to the booth to ask their own questions.

As led by Andrew Fulkerson, MAPEI's Technical Services Manager for Concrete Restoration Systems (CRS), MAPEI's WOC demo team entertained and informed with demos of CRS and FRP products alike. In addition, demonstrations for the **Elastocolor**®

line of high-performance coatings featured noted speed painter Tim Decker, who raffled off his paintings that utilized *Elastocolor* products. Decker's banter, energetic music and business card collecting (for the raffle) drew huge crowds, as did O'Connor and the rest of the live demos.

MAPEI also participated in events outside of the booth at WOC. MAPEI/GRT sponsored a tour of the Pat Tillman Memorial Bridge and Hoover Dam, which was hosted by MAPEI/GRT technical representative Paul "PJ" Jordan. Plus, MAPEI donated product for two charity auctions. The benefiting charities – Concrete Cares and Concrete Industry Management (CIM) – enjoy routine interaction with MAPEI throughout the year. Concrete Cares supports research into curing cancer, with a focus at WOC on curing childhood cancers. CIM is a business/education program that works with colleges to enroll students in management programs specifically geared toward the concrete industry. According to CIM Executive Director Eugene Martineau, "Since 1996 we have had 1,183 graduates go through our program. And 80 percent of our graduates have gone on to have careers in the concrete industry." MAPEI is proud to work with both programs.



Speed painter Tim Decker

Tim Decker is an internationally touring speed painter. Each of his paintings takes four to seven minutes to complete, and his performances are set to music. Painting comes naturally for Decker, who has only taken two art classes. He began "speed painting" after dreaming one night that he was a speed painter working on a boardwalk. When he awoke the next morning, he bought a gallon of paint, painted a portrait of Mr. T and has never looked back. He has performed for some of the top companies in the world including Mercedes-Benz, Merrill Lynch and, now, MAPEI.

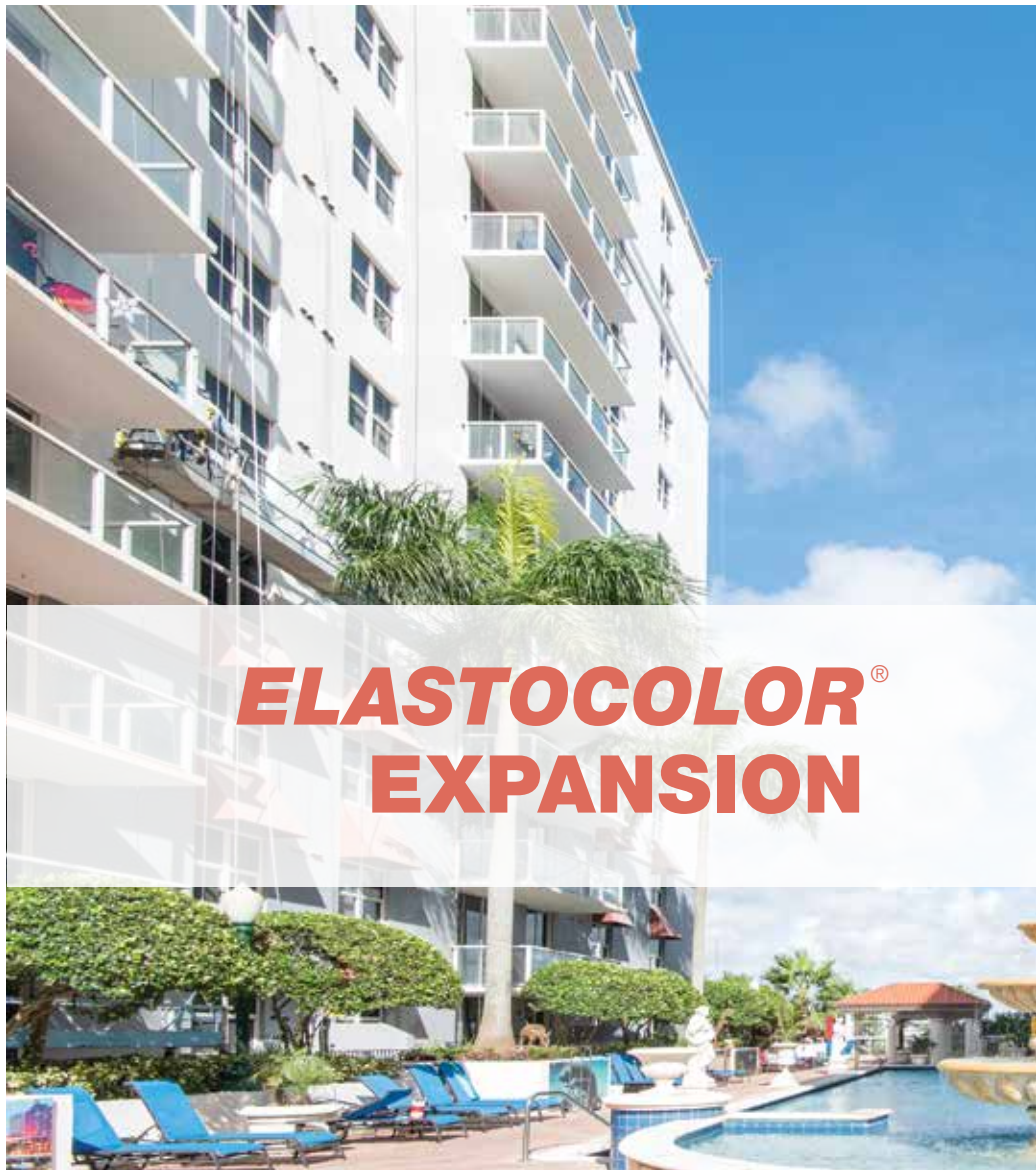




Elastocolor Primer AR

Water-based, alkali-resistant primer for *Elastocolor* coatings

Elastocolor Primer AR is a specially designed primer for use on exterior, above-grade, new and previously coated concrete and masonry surfaces. *Elastocolor Primer AR* will protect subsequent coatings from the damaging effects of high pH present in freshly placed cement-based products. It remains highly flexible, offers excellent filling and adhesion on prepared substrates, and is designed for compatibility with MAPEI's *Elastocolor* coating systems.



ELASTOCOLOR[®] EXPANSION



Features and Benefits

- Protects the topcoat against damaging effects of high pH levels in the substrate
- Suitable for use on all cementitious substrates including stucco, concrete, concrete masonry units (CMUs) and a variety of other building materials
- Vapor-permeable to allow the passage of water vapor into and out of the substrate
- Provides a uniformly sealed surface over materials of varying porosity

Uses

- Concrete, brick, masonry, stucco, CMUs and cement board
- As a block filler on porous CMUs
- Above-grade exterior and interior surfaces
- For enhancing aesthetics and general protection on surfaces up to pH 13
- For use on new and previously coated substrates



Elastocolor Texture

Water-based, high-build, acrylic, textured coating

Elastocolor Texture is a specially designed coating for use on exterior, above-grade, new and previously coated concrete and masonry surfaces. Its unique blend of aggregates produces an attractive, high-build, textured finish. *Elastocolor Texture* is ideal for use on restoration projects to reduce the appearance of surface imperfections and repairs or wherever a uniform textured finish is desired. This coating remains highly flexible and offers excellent filling properties and adhesion to prepared substrates.

Elastocolor Primer AR and Elastocolor Texture are newcomers to MAPEI's protective/decorative coatings



Features and Benefits

- High-build texture that improves aesthetics over irregular substrates
- Suitable for use on all cementitious substrates including EIFS systems, stucco, concrete, concrete masonry units (CMUs), cement board and a variety of other building materials
- Vapor-permeable to allow the passage of water vapor into and out of the substrate
- UV-resistant for better color retention

Uses

- Concrete, EIFS systems, stucco, CMUs, cement board and fiber-reinforced polymer (FRP)
- Above-grade exterior surfaces
- For enhancing aesthetics over repairs or irregular substrates and for general protection
- For use on new and previously coated substrates



EXPERTISE ON ADRENALINE

MAPEI's run at SURFACES was fast-paced, high-quality



The International Surface Event (TISE) drew more than 25,000 industry professionals from over 100 countries to the Mandalay Bay Convention Center on January 23 to 25. Comprising the three trade shows SURFACES, StonExpo/Marmomac and TileExpo, TISE featured more than 600 manufacturers and suppliers of tile, stone, marble, resilient, laminate, hardwood, carpet and rugs.

SURFACES was a busy and successful show. MAPEI hosted a press breakfast in order to introduce its newest technologies and services to the invited press representatives. Brian Pistulka,

Business Manager Tile and Stone Installation Products, spoke about *Mapeguard*® WP waterproofing systems, *Mapesonic*™ RM sound-reduction membrane and *Planislope*™ RS sloping mortar. Jeff Johnson, Product Manager for Floor Covering Installation Systems, introduced *Mapecontact*™ MRT and *Mapecontact* SRT flooring installation tapes, *Polyplan*™ RSL self-leveler, and *Ultrabond ECO*® 811 and *Ultrabond ECO* 977 flooring adhesives. And Sam Biondo, National Technical Presenter, gave an energetic and impassioned speech about the importance of (and need for) quality training and youth recruitment in the industry.



MAPEI also participated in an educational presentation about grout and mortar. Brian Pistulka joined Jim Whitfield, Director of Technical Services, in presenting “Modified Muds and Powerful Powders” to attentive audience members, who were given vouchers entitling them to free samples of the products mentioned in the presentations.

The MAPEI Demo Team, led by Sam Biondo, drew large crowds to the booth each day. Using a tried-and-true formula of demonstrating multiple products at the same time to engage the crowd and increase the scope of products demonstrated, Biondo and his team moved seamlessly through several demonstrations:

- 1 “MAPEI Solutions for Creating Slopes, Waterproofing, Reducing Sound and Installing Large/Heavy Tiles.” This demo featured *Planislope RS*, *Mapeguard WP* systems, thixotropic mortars and *Mapesonic RM*.
- 2 “MAPEI Solutions for Installing Floor Coverings over High-Moisture Concrete Substrates.” This demo incorporated *Mapecontact* installation tapes, *Planiseal® PMB* moisture barrier, *Planiprep™ MRS* skimcoat and *Polyplan RSL*.
- 3 “Grouts Fueled By Innovation / Stone, Tile & Grout Care Solutions.” This demo highlighted the features and benefits of the grouts *Ultracolor® Plus FA*, *MAPEI Flexcolor® CQ* and *MAPEI Flexcolor 3D*, as well as *UltraCare™* stone/tile/grout maintenance products.





Biondo and the team were beamed onto a video screen high above the demo stage so that their skills – and MAPEI’s products – were seen throughout the surrounding area. The video screen also made it easier for the viewers in the aisle to see the action on the stage, as there was a crowd of people standing three and four deep to witness the performances.

One of the demoed products, MAPEI’s **UltraCare Cement Grout Haze Remover**, was awarded “Best in Technology” as part of the “Best of TISE Event” awards, which recognize the innovation and excellence of exhibiting companies. Sponsored by *StoneWorld*, *Tile Magazine*, *Floor Covering News* and *Contemporary Stone & Tile Design*, the awards are given to companies with products considered “best” in their class by judges appointed by the sponsoring publications.

David Mowery, MAPEI’s Business Manager for Color Products and *UltraCare*, was pleased with the recognition. “*UltraCare Cement Grout Haze Remover* is part of



David Madonia, group publisher at BNP Media (left), and Jason Kamery, editor of *Contemporary Stone & Tile Design* (right), present MAPEI’s Chairman of the Board Nick DiTempora (middle) with the “Best in Technology” award for *UltraCare Cement Grout Haze Remover*.



our 'problem-solver' category," he said. "Formation of haze film on tile surface after grouting is common. This high-performance product successfully removes haze and restores the tile surface to its natural beauty." Both he and Nick Valenti, the Business Development Manager for *UltraCare Systems*, demonstrated the product as well as the rest of the *UltraCare* line.

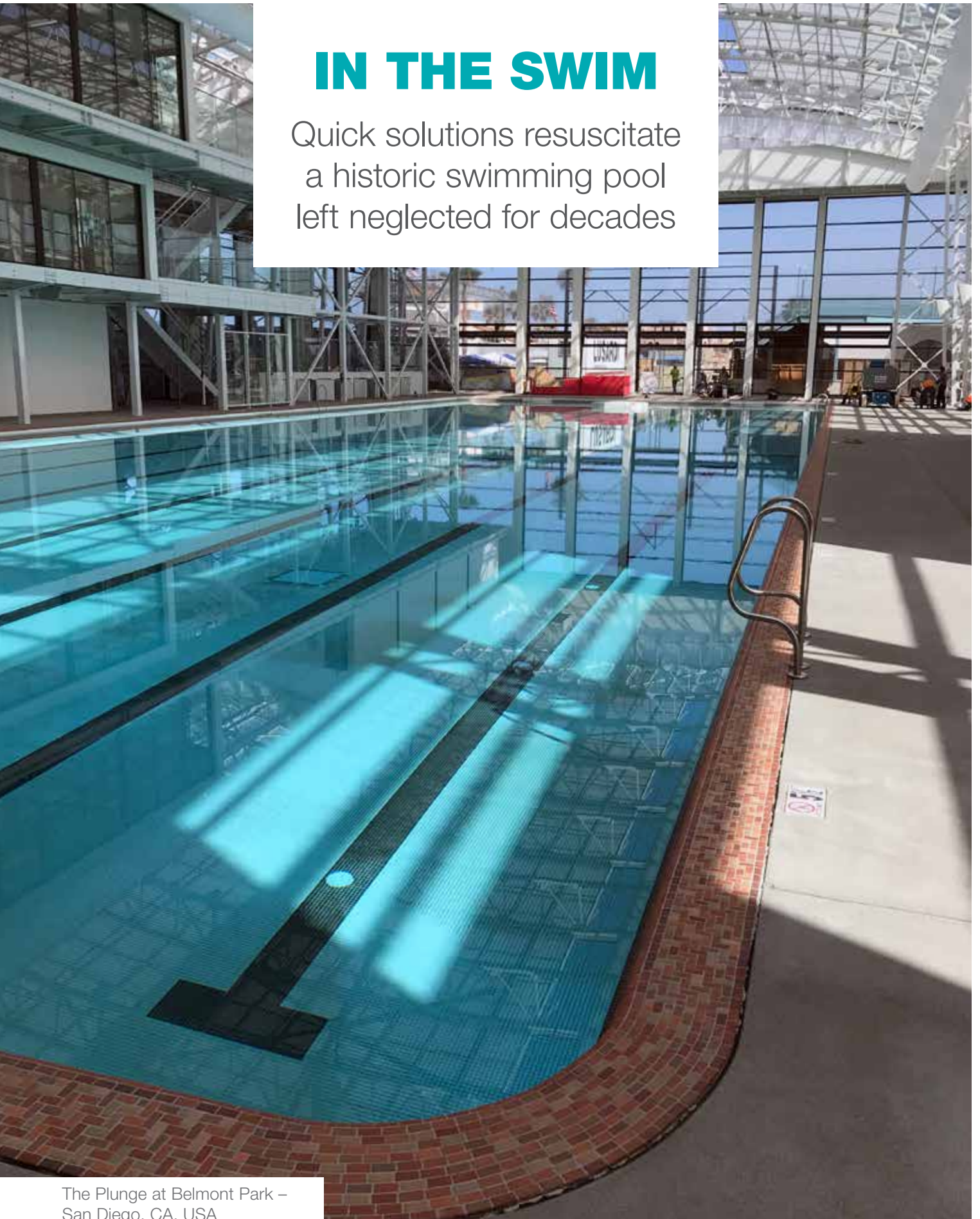
Celebrating 750 of MAPEI's most valued clients from TISE (as well as from World of Concrete, being held concurrently in Las Vegas), MAPEI hosted a VIP event at the LIGHT Vegas nightclub at Mandalay Bay. The evening of food, drink and entertainment was the party to attend that night and was the topic of discussion at both shows the next day.

From education to industry support to networking, MAPEI maintained its reputation at both trade shows as a premier exhibitor.



IN THE SWIM

Quick solutions resuscitate a historic swimming pool left neglected for decades



The Plunge at Belmont Park – San Diego, CA, USA

Overview: After decades spent in disrepair at a popular Southern California amusement attraction, a historic indoor pool enjoys a vintage yet updated look, thanks to MAPEI's tile installation products and guidance.

The year was 1925. Bathtub gin, the Charleston and a new form of entertainment called "motion pictures" were all the rage. Money and people were flowing into California in search of a new gold rush – Hollywood fame. Those newly minted movie stars, as well as their wannabes, made the trek down the coast from Los Angeles to a sleepy, little seaside town called San Diego in search of rest and relaxation. The unspoiled waters offered fishing. The mountains provided hiking. And San Diego's Mission Beach featured the West Coast's version of Coney Island, The Mission Beach Amusement Center.

Built on the sands of Mission Beach by one of San Diego's leading developers, sugar magnate John D. Spreckels, The Mission Beach Amusement Center was designed to draw tourists to San Diego. The center promoted the city and, not so coincidentally, Spreckels' real estate ventures. It featured the Giant Dipper Roller Coaster, a 2,600-foot-long (792-m) wooden thrill ride with two 18-passenger trains. The center's other main attraction was The Natatorium, an indoor swimming pool constructed from stucco and steel in Spanish Renaissance style as the centerpiece of the park. Later renamed The Plunge, the pool measured 60 x 175 feet (18.3 x 53.3 m) with a capacity of 400,000 U.S. gals. (1 514 165 L), making it the world's largest saltwater pool for its time.

The beachfront center thrived during the lean years of the Great Depression as it offered cheap entertainment. It grew in popularity as the bustling port city of San Diego grew during World War II. By 1940, however, the saltwater had begun to damage The Plunge's filtration system. So with a few modifications, it became the largest indoor, heated freshwater pool in Southern California.

Eventually, in 1955, the entire Mission Beach Amusement Center complex was renamed Belmont Park and was sold to a series of "private owners." By the early 1970s, the pool and the roller coaster had fallen into disrepair. By 1976, the park was closed. A citizens group saved the complex from demolition by having the site declared a National Historic Landmark, but both the Giant Dipper Roller Coaster and The Plunge remained closed as they did not meet modern fire and earthquake safety codes. They stood empty for years – echoes of a San Diego that seemed lost in time.

In 1988, portions of the complex reopened as a commercial shopping center featuring restaurants and tourist-attracting shops, including a revamped version of The Plunge that had been updated to modern safety codes. Although much of the original tilework was removed, some historic features were left intact, including steps leading into the pool and a pedestal at the bottom of the steps.

Fast-forward to 1990 when the Giant Dipper was finally brought back into service after a \$2,000,000+ renovation. The entire Belmont Park complex was back in operation with both The Plunge and the Giant Dipper, as well as a boardwalk full of shops and restaurants, to once again draw

tourists and locals to Mission Beach. The area boomed. But in 2014, the waters of The Plunge once again became troubled, and the historic public pool was closed for "unexpected repairs."

MAPEI products on the jobsite

Owned by Pacifica Enterprises (a San Diego-based development company) since 2012, The Plunge shut down in 2014 due to unsafe conditions stemming from a leaking roof. Pacifica took the opportunity of the closure to completely renovate the natatorium literally from the ground up, or rather from the roof down. Pacifica spokesman Chris Wahl said that initially the company believed that they could simply repair the building and the pool, but deeper inspection revealed other issues besides the leaking roof, such as corrosion in the structure's steel columns and beams.

As the inspections progressed, it was determined that all 21,000 square feet (1 951 m²) of the building had to be demolished, leaving only girders surrounding the historic pool. The new natatorium features a glass facade instead of the original Spanish Renaissance stucco walls that did not withstand the constant buffeting from saltwater spray. The historic pool was also given a facelift and returned to the splendor of the past – courtesy of Lusardi Construction and Christian Brothers Flooring & Interiors, working with MAPEI.

"From the beginning, Pacifica and the general contractor, Lusardi Construction, knew that they wanted a period-correct feel for the tiling in the pool and the surrounding rooms," said Dennis Sandell, MAPEI's TSIS sales representative for San Diego and Palm Springs. "They contacted Mark





Columbus at Christian Brothers to act as the consultant and installing contractor. It was Mark who brought MAPEI on board early on. In fact, he and I helped to put the specification together.”

Columbus and Sandell proposed using MAPEI for a full system that would allow the pool to be filled with water 72 hours after the tile was installed.

“The pool’s surface was shotcrete,” Sandell continued. “It was in bad shape. The Christian Brothers crew had to float the substrate with a dry pack of **Mapelastic 315** with **Planicrete AC** in the mix to adhere to the surface, as well as to add flexibility to the mortar bed.”

The spec called for period-correct 3/4" x 3/4" (19 x 19 mm) tiles, which were installed using MAPEI’s **Granirapid** System. The premium, rapid-setting, flexible tile mortar allowed for the “quick” installation of 1,700 sq. ft. (158 m²) of mosaics in the Olympic-sized pool. The tiles were grouted with **Ultracolor Plus FA**. The pool’s perimeter was caulked with **Mapesil T**. “The tiles mark the water line, they mark the depth, they decorate the historic pedestal, in addition to tiling the pool,” Sandell explained.

In the showers, steam rooms, bathrooms, pool area and a gym rechristened with the name “Fit,” the Christian Brothers crew first roller-applied **Mapelastic AquaDefense** waterproofing membrane. They then installed large-format tiles with **Ultraflex LFT** mortar and grouted them with **Ultracolor Plus FA**. For the exterior cladding, the large panel tiles were installed with **MAPEI Ultralite S2** mortar and grouted with **Ultracolor Plus FA**.

For a pool plagued with past issues, were there any challenges on this project? Sandell chuckled at the question. “Every

time something would come up on site, we [MAPEI] would have a solution,” he said. The tile installation portion of the sprawling renovation took one year from start to finish, beginning in 2018 and ending in 2019.

“The biggest problem actually gave us a great opportunity to provide a solution,” Sandell said. “After the tile contractor waterproofed the pool, the GC had to cut out several holes in the pool walls to raise the drains. We spec’ed **Planitop 330 Fast** for the vertical repair. This product allowed them to achieve a quick cure so that they could quickly turn around and re-waterproof these areas.”

Although as of this publication, The Plunge has yet to re-open to the public. When it does, the pool will be in all of its former splendor, thanks in large part to MAPEI.

TECHNICAL DATA

The Plunge at Belmont Park – San Diego, CA, USA

Year of construction: 1925

Years of MAPEI involvement: 2018-2019

Where MAPEI products were used: *Mapelastic*[®] 315 with *Planicrete*[®] AC was used to float the pool substrate; *Granirapid*[®] System was used to install pool tile; tiles throughout the building were grouted with *Ultracolor*[®] Plus FA; the pool’s perimeter was caulked with *Mapesil*[™] T; showers, steam rooms and bathrooms were waterproofed with *Mapelastic AquaDefense*; large-format tiles were installed with

Ultraflex[™] LFT[™]; the exterior cladding’s large panel tiles were installed with *MAPEI Ultralite*[™] S2; and *Planitop*[®] 330 Fast was used for vertical repair of pool waterproofing

Project owner: Pacifica Enterprises

Architect: Fredrick Clemeshaw

Installer: Christian Brothers Flooring & Interiors

General contractor: Lusardi Construction

MAPEI coordinator: Dennis Sandell

Challenges: Repair holes in waterproofing

MAPEI Products

Pool substrate remodel: *Mapelastic 315* with *Planicrete AC*

Pool tile installation: *Granirapid* System, *Ultracolor Plus FA*, *Mapesil T*

Waterproofing repairs: *Planitop 330 Fast*

Shower, steam room and bathroom waterproofing in the pool and gym areas: *Mapelastic AquaDefense*
Shower, steam room and bathroom tile installation in the pool and gym areas: *Ultraflex LFT*, *Ultracolor Plus FA*

Exterior cladding installation: *MAPEI Ultralite S2*, *Ultracolor Plus FA*

Sassuolo's
team manager,
Mr. De Zerbi,
looking determined

TEAM SASSUOLO

The race to qualify for the Europa League continues

Sassuolo is ready for a great second half of the season

This article is reprinted from *Realtà MAPEI* International magazine, Issue #73.



About Team Sassuolo: Unione Sportiva (U.S.) Sassuolo Calcio, also known as Sassuolo, is MAPEI's football (soccer) team based in the town of Sassuolo, Italy. Founded in 1920, the team played in Serie C, but has advanced to Serie A under MAPEI ownership. The team plays in MAPEI Stadium – Città del Tricolore in the Italian city of Reggio Emilia, a stadium that features MAPEI's sports products.

Sassuolo still hopes to finish high enough up the league table to qualify for international football in the 2019-2020 season. The end of the first half of the 2018-2019 season was not easy for Sassuolo, but the team battled away to maintain its position in the league.

The midfield player from Ghana, Alfred Duncan, has been playing at a very high level most of the time. Other players who have performed really well are Domenico Berardi, who now gets much more involved in the team's play than he did two years ago, Stefano Sensi, Kouma El Babacar, and a number of others. The great performance in the match at San Siro Stadium against Inter Milan injected fresh impetus into the team managed by Roberto De Zerbi, but Sassuolo still needs to do better in its home matches.

Fireworks

Sassuolo could not beat Udinese at MAPEI Stadium: The match ended in a 0-0 draw. The next home game finished 3-3 against Fiorentina with all the fireworks happening in the second half.

From a sporting viewpoint, Sassuolo committed footballing suicide: 3-1 ahead after 80 minutes, its opponents managed to equalize in the 96th minute. The magnificent Duncan opened the scoring with Babacar getting a second before Simeone pulled one back for Fiorentina. Sensi then scored again for Sassuolo, only for Benassi and Mirallas to score twice for the away team. "We dominated the game for 70 minutes," Mr. De Zerbi was keen to tell us. But the team clearly faded at the end, particularly during all the time added on.

The team sponsored by MAPEI was back to its winning ways when it beat Frosinone 2-0. The team took the lead through a goal scored by the former Sassuolo player Ariaudo in the 43rd minute. "We played well in the first half," De Zerbi added, "even though we did not always move the ball around very quickly." Domenico Berardi scored a second in the 58th minute. "Domenico gives Sassuolo that something extra, and he could also do it for the Italian national team," the manager assured us.

The next game was bound to be tough against Torino. The match ended 1-1 with Torino taking the lead in the 58th minute thanks to its striker Belotti, but Enrico Brignola scored an equalizer in the first minute of added time. Here is what De Zerbi had to say: "We could have avoided conceding that first goal, although I must admit Belotti did something quite extraordinary. Considering the chances we created, we could have done better. Enrico is in fantastic form at the moment: He took part in the UEFA European Under 19 Championship, so he was a little bit behind with his preparation at the beginning of the season. Brignola's problem is that he is Berardi's reserve at the moment. Enrico must grit his teeth and remember that very few people rate him as highly as I do."

Sassuolo's slow climb back up into a Europa League qualifying position came to a halt at the Olympic Stadium against Roma, losing 3-1 with goals by Perotti (penalty), Schick and Zaniolo. Babacar's goal in the 90th minute made the score line more respectable.

Sassuolo's game against Atalanta at the MAPEI Stadium also went badly, with the team from Bergamo winning 6-2. Atalanta dominated much of the first half and scored through Zapata and Gomez; Sassuolo began the second half more promisingly and scored through Duncan, but it did not take Atalanta long to regain a two-goal lead after their promising defender, Mancini, scored in the 54'. Sassuolo's hopes were briefly revived when Duncan scored another spectacular goal, but Atalanta then brought on Josip Ilicic who scored a hat-trick in 18 minutes. So, were Sassuolo's problems more physical or tactical? "Apart from the first 10 minutes

of the second half," Mr. Zerbi admitted, "nothing went well." Despite the poor overall performance, Duncan again showed his great qualities.

San Siro, surreal atmosphere

Following a number of incidents outside the stadium and racist chants during the Inter Milan-Napoli match, the Italian Football League ordered Inter Milan to play its match against Sassuolo behind closed doors on the first day of the second half of the season. This eagerly awaited match finished 0-0.

The only people allowed to watch the Inter Milan-Sassuolo game at Meazza Stadium were 11,000 children from Inter Milan's football schools, accompanied by a few adults. The stadium's first ring of seats opposite the VIP stand was decorated with banners with the abbreviation "BUU" written on them, standing for "brothers universally united" – a decidedly surreal atmosphere for a Serie A match. The children's voices chanted some simple songs and a few of them even supported Sassuolo, but it felt like being at one of those charity football matches with famous singers playing. As De Zerbi rightly pointed out: "Football is played for people and I do not like it when the fans are not allowed to watch."

The first ever draw between Inter Milan and Sassuolo was a very evenly matched game in both halves. Boga, Bourabia and Boateng (with a header) had Sassuolo's best scoring opportunities. Inter Milan also had a number of chances to score, the best falling to Lautaro Martinez right at the end of the match. After a number of bad results in the Serie A League and Italy Cup, Sassuolo finally put on a praiseworthy performance against one of the top teams. It is worth noting that Sassuolo has won seven and drawn one of its last nine matches against Inter Milan.

"Luckily for us, Lautaro Martinez shot wide right at the end of the match," Mr. De Zerbi noted. "If he had scored, nobody would be singing our praises now. This fine performance shows the players are developing nicely and working really hard in training."

A draw at San Siro Stadium against a relatively poor Inter Milan set the Sassuolo fans dreaming: "We want to qualify for the Europa League again," the fans kept on saying. But Mr. De Zerbi knows



Sassuolo's midfielder Stefano Sensi gets away from Daniel Ciofani in the match at Stirpe Stadium in Frosinone.



LEFT: The youngster Pol Lirola dribbles around some Torino players.

RIGHT: Alessandro Matri and Nicolas Nkoulou again in the match against Torino.

how to stop everybody from getting carried away: "We still need several points to avoid relegation. After we have achieved that aim, we can start thinking about other goals. At the beginning of the season, our main aims were to avoid relegation, improve and, if possible, finish on level terms with or above teams like Cagliari and Atalanta."

Goals and great entertainment

The team sponsored by MAPEI won its next game 3-0 against Cagliari. Sassuolo took the lead after just nine minutes through its midfielder Locatelli, who tapped in the rebound after the goalkeeper Cragno failed to hold onto the ball. The second goal came just before the end of the first half with Babacar scoring his sixth goal of the season from the penalty spot. Matri added another towards the end of the match. Duncan also played a major part in this third goal after coming on in the 75th minute to replace Magnanelli. The defense also played extremely well, with Peluso putting in a fine performance playing out of position as a central defender.

"Sassuolo-Cagliari was a match I really feared," De Zerbi told us. "A team like mine with lots of young players in the squad was always

Defeat against Napoli in the Italy cup

Sassuolo's adventure in the 2018-19 Italy Cup ended in the round of the last sixteen. After finishing 11th in the 2017-18 League Championship, Sassuolo did not have to play in the summer qualifying rounds and only entered the Italy Cup in the round of the last 32, playing against Catania at MAPEI Stadium.

Sassuolo came under pressure during the middle of the match, due to the great determination shown by the team from Sicily but managed to win 2-1 in the end. Sassuolo took the lead through Matri in the 14th minute, but Brodic equalized for Catania in the 41th minute. Locatelli scored the match-winning goal in the 81th minute.

Sassuolo then played against Napoli, one of the best teams in Italian football at the moment, at San Paolo Stadium in the round of the last sixteen. The match finished 2-0 for Napoli thanks to goals by Milik in the 15th minute and Ruiz in the 74th minute. It was a very physical game with seven players getting booked.

The Italy Cup is still one of Sassuolo's dreams.



Sassuolo has its own new training center

likely to lose concentration after such a brilliant result against Inter Milan, and there was a real danger of playing very badly against an allegedly weaker team. On the contrary, my players were really up for the game against Cagliari, proving just how far they have come.” Sassuolo finally won another league game at MAPEI Stadium after 126 days. “All our best players are coming back into form, although we were missing certain key players we have built our team around: Marlon, Sensi and Duncan (initially). We played well both in defense and attack, constantly getting forward and only really coming under pressure from Cagliari for about 10 minutes in the second half.”

Boateng leaves, Demiral joins

Sassuolo players were very much in the spotlight during the winter transfer window. The club’s Managing and General Director, Mr. Giovanni Carnevali, received plenty of enquiries about the midfielder Sensi, as well as Duncan and several other players: Sassuolo politely declined all the offers.

The club from Sassuolo sold the strikers Marcello Trotta to Frosinone and Kevin Prince Boateng to Barcelona. Boateng is on loan to the team from Spain, which also has the option to buy his contract. The defender, Cristian Dell’Orco, moved from Sassuolo to Empoli (initially on loan but with the team from Tuscany eventually having to pay the full transfer fee). Young Alessandro Tripaldelli is now on loan to Crotona. Meanwhile the Turkish defender Merih Demiral from Alanyaspor joined Sassuolo. Demiral will be signing for Sassuolo after completing a period on loan.

Gianluca Scamacca, who was on loan to Pec Zwolle (Holland), has now returned to Sassuolo.



Defender Merih Demiral (left) and Sassuolo’s General and Managing Director Giovanni Carnevali

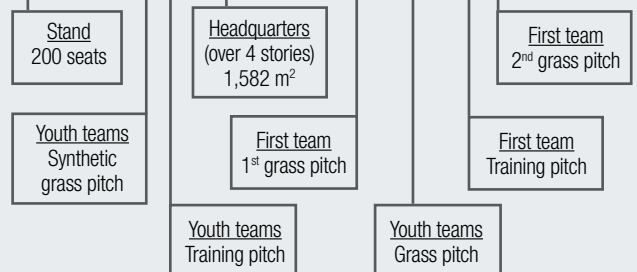
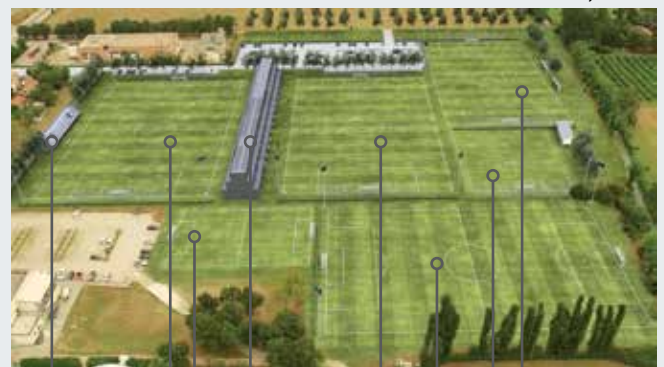
Sassuolo has a brand-new training center all to itself, located in a suburb of Sassuolo known as “Cà Marta.” The project’s designer is the architect Giancarlo Floridi, and the center was built by Colombo Costruzioni.

“It is a real diamond in terms of its architecture, facilities and functionality,” noted Giovanni Carnevali, Sassuolo’s General and Managing Director. “The materials used,” said the lawyer Andrea Fabris, Sassuolo’s General Secretary, “are of the highest order as is always the case with MAPEI.”

The center covers an area of 43,000 m², including three football pitches for matches between 11-a-side teams. One of the pitches was made using synthetic grass and has its own stand. One of the other two pitches, which were made of natural grass, has a heating system. There is also a pitch measuring 40 x 47 m for goalkeeper training.

The center’s grounds include a 200-seat spectator stand and 178 parking spaces. Measuring 1,582 m², the four-story executive building features an underground level equipped with various utilities (storage space, garages, launderette, etc.). The center will become fully operational over the next few months.

Total area: 43,000 m²




MANUFACTURERS' INVENTORY

Transparency about MAPEI's product ingredients is clearly a priority

The previous issue of this magazine highlighted the "Red List" and the importance of avoiding certain chemicals of concern when formulating products. Today's sustainability professionals, however, want more than to just know what isn't in a product; increasingly, they want to know specifically what is in the bag or bucket. Being forthcoming about a product's composition is known as ingredient transparency.

The update of the U.S. Green Building Council's LEED building certification program to Version 4 in 2012 started the industry down a path of ingredient transparency. Other programs such as the Living Building Challenge and the International WELL Building Institute's WELL Building Standard have adopted similar requirements to disclose ingredients.



Creation Date: November 26th, 2018
Product Name: MAPEI Flexcolor CQ
Manufacturer Inventory: Chemical screen threshold reporting 1000 ppm (0.1%)
Living Building Challenge (LBC): MAPEI has publicly disclosed an ingredients list for this product on the Safety Data Sheet (SDS) as required by laws and regulations. The portion of the ingredients that are not required to be disclosed on the SDS are considered to be confidential business information. These ingredients are screened per the most current LBC 'red list' v3.1 (LFI website: <https://living-future.org/declare/declare-approvered-lbc>) and are found to **not contain** any intentionally added 'red list' chemicals.

Material Ingredient Reporting for LEED v4, Option 1: MAPEI has developed Manufacturer Inventories to support our customer's material ingredient chemical transparency initiatives and to contribute to LEED v4 MR04 Material Ingredient Option 1 credit requirements. This Manufacturer Inventory has been third-party verified by GreenCircle Certified, LLC to be in compliance with the LEED v4 standard requirements and Clean Production Action's How to Use GreenScreen to Contribute to LEED v4 guidelines. Ingredients defined as trade secret or intellectual property have been withheld; however, the role, amount and hazards based on screening for the levels of ingredients presented are reported on this page per the requirements of the Globally Harmonized System of Classification and Labeling of Chemicals rev. 8 (2015).

Name	CAS Number	Ingredient Role	Ingredient Amount	GreenScreen LT Score	Contains Red List Chemicals
Silica Sand	14805-60-7	Filler	70%-75%	1-1 (Carcinogenicity)	No
Water	7732-18-5	Solvent	10%-15%	2H.4	No
Styrene Acrylic Polymer	25586-20-3	Binder	3%-10%	LT-UNK	No
Titanium Dioxide	13463-67-7	Pigment	1%-2%	LT-1 (Carcinogenicity)	No
Trade Secret	Trade Secret	Filler	1%-5%	LT-UNK	No
Trade Secret	Trade Secret	Binder	0.1%-2.5%	NOSS	No
Trade Secret	Trade Secret	Binder	0.1%-2.5%	LT-P1 (Endocrine Activity)	No
Propylene Glycol	57-55-8	Solvent	0.1%-2.5%	LT-UNK	No
Sodium Triphosphosphate, Anhydrous	7758-29-4	Reagent	0.1%-2.5%	LT-UNK	No
2,2-A, Trimethylpentane-1,3-Diol	25265-77-4	Binder	0.1%-2.5%	LT-P1 (Aquatic Toxicity)	No
Methacrylate	1336-21-6	Reagent	0.1%-2.5%	LT-1 (Developmental)	No
Ammonium Hydroxide	107-21-1	Solvent	0.1%-2.5%	LT-P1 (Skin Irritant)	No
Ethylene Glycol	Trade Secret	Reagent	0.1%-2.5%	LT-1 (Carcinogenicity)	No
Trade Secret	84742-85-0	Process Agent	0.1%-2.5%	LT-1 (Carcinogenicity)	No
Petroleum Distillate	9003-49-0	Binder	0.01%-1%	LT-UNK	No
2-Propenoic Acid, Butyl Ester, Homopolymer	9004-62-0	Viscosity Agent	0.01%-1%	LT-P1 (Endocrine Activity)	No
Hydroxyethyl Cellulose	7722-88-5	Dispersant	0.01%-1%	LT-UNK	No
Tetrasodium Pyrophosphate	8849-55-8	Solvent	0.01%-1%	LT-P1 (Endocrine Activity)	No
Ammonium Salt of Sulfated Nonylphenylethoxysulfonate	107-98-2	Solvent	0.01%-1%	LT-P1 (Multiple)	No

Thank you for using MAPEI products. If you have any questions or concerns regarding the information provided, please feel free to contact me.

Dan Marvin | Director, Technical Services
 P: 954-246-8532 | E-mail: DMarvin@mapei.com

MI-26-18

MAPEI Corporation
 1141 E. Newport Center Drive
 Deerfield Beach, FL 33442



Example of Manufacturers' Inventory documentation by GreenCircle for MAPEI Flexcolor® CQ



The largest of these programs, LEED v4, allows buildings to obtain one point when their building materials offer a “chemical inventory” of ingredients. To obtain this point, the building must utilize at least 20 permanently installed products from at least five different manufacturers – each of whom discloses product ingredients. Industries such as windows, doors, furniture and flooring are well along this path. Yet identifying a fifth manufacturer that offers chemical inventories can be a challenge – unless a customer is working with MAPEI. Several years ago, MAPEI saw the need for disclosing chemical inventories to comply with LEED and now offers this information for more than 50 products.

LEED’s Materials & Resources (MR) credit for Material Ingredients allows several paths to compliance. What customers often request is a Health Product Declaration (HPD). This program is administered by the HPD Collaborative, a third-party organization composed of a wide variety of industry leaders – which MAPEI has found to produce mixed results. Another option is a certificate from Cradle to Cradle, a program that is more structured but is also much more expensive, costing up to \$30,000 per product. Because Cradle to Cradle certificates also include ongoing maintenance fees and can take a year or more to obtain, they are not very practical for a company like MAPEI with more than 1,500 products.

The path that MAPEI has chosen for ingredient transparency is the Manufacturers’ Inventory (MI). You might think of an MI document as a bulked-up Safety Data Sheet where all of the ingredients are listed instead of just those with potential health impacts.

All of these paths have the same basic idea: Collect the information about what composes a product and run that data through a third-party certifier called GreenScreen. This third-party verification checks whether any of a product’s ingredients are known to impact human health. If the GreenScreen identifies an impact, it must be disclosed.

MAPEI takes the extra step of having its Manufacturer’s Inventory process certified by GreenCircle, a third-party certifier that is well known in the sustainability marketplace. MAPEI’s MI documentation

can be accessed on the GreenCircle website or requested through MAPEI’s Technical Services Department.

For consultants and architects working on sustainable buildings, this documentation can represent the difference between having a successful LEED certification and not being able to generate enough LEED points. When MI documents are bundled with Environmental Product Declarations (EPDs) – a topic for another day – even more points can be obtained by using MAPEI products. As an added service to its customers, MAPEI has begun compiling environmental data into a Product Sustainability Report that shows clearly how a product’s information can apply to various programs.

MAPEI’s fundamental principles are stated in its 7 Pillars, including the goal to “Lead in Environmental Health and Safety.” That goal requires MAPEI to monitor and respond to the informational needs of its customers, including the now prevalent need for ingredient transparency. MAPEI is far ahead of its competition in satisfying this need for documentation. If the request relates to chemical inventory, ingredient disclosure or an HPD, the answer from MAPEI will be to provide a Manufacturer’s Inventory document.



About the author:

Jim Whitfield

Jim is the Director of MAPEI’s Technical Services and has been active in many industry committees over the years. Currently serving as President of the Materials & Methods Standards Association and selected for the National Tile Contractors Association (NTCA) Technical Committee, he also participates as a voting member on the ANSI A108 Committee and the Tile Council of North America’s Handbook Committee. In 2001, he was honored with Fellowship by the Construction Specifications Institute, thanks to his contributions to education in the construction industry and his exemplary service to CSI.

CORPORATE RESPONSIBILITY



RACING FOR A CAUSE

MAPEI Director of Sales, Northern Area, Steve Cameron joined Sales Representative Tyler Barton to support the recent Mr. Davids Challenge in Illinois. The non-competitive 29K bike ride and raffle has long been a MAPEI initiative. In fact, Cameron said, "I was on hand for the first event, and I'm honored to have been at every one since." This year's ninth annual challenge drew a record 220+ people to the Bike Race Event.

An initiative of Mr. Davids Foundation, the event provides financial support to

community organizations and initiatives. In addition to the bike ride, for 2019, Mr. Davids held 17 silent auctions and a raffle with 25 large-scale raffle items. The largest prize was a "tailgating package" that received a \$700 bid.

"Overall, the foundation is a continuously running program," Barton said. "However, the bike race brought in an estimated \$150,000."



REHABBING A HOSTEL

In October, MAPEI partnered with the charity organization AEC Cares for "ProjectHouston," donating time and materials in order to help improve conditions at Santa Maria Hostel. Located in the Houston (TX) neighborhood of Spring Branch, Santa Maria's Jacqueline House is a residential addiction treatment and housing facility that is home to approximately 100 women and their children.

Hit hard by recent hurricanes (Harvey, Irma and Maria), the facility's building and surrounding grounds were in need of their own recovery. Consequently, AEC Cares adopted Santa Maria Hostel as the program's 2018 "blitz build," an accelerated daylong building project. MAPEI has been a participating sponsor in every AEC Cares project since the first one in 2007.

Mike Granatowski, MAPEI's Director of Architectural and Commercial Projects, has been instrumental in organizing MAPEI's involvement with AEC Cares events. He described this year's project as "the most successful one yet. Working together



HURRICANE RELIEF



The 2018 hurricane season was particularly eventful. When Hurricane Florence hit Virginia and the Carolinas, it caused catastrophic damage. Along with terrible winds of 130+ mph (209+ kph), the intense flooding that followed made most major roads impassable. Large stretches of Interstate 40, Interstate 95 and Route 70 – the main East Coast thoroughfares – remained closed for days after.

No sooner had Florence passed than Hurricane Michael slammed into the Florida panhandle. With top wind speeds of 155 mph (249 kph), Michael flattened homes and businesses in its path.

In an effort to help, the employee activities committee of MAPEI's Deerfield Beach (FL) headquarters collected funds for donation to the American Red Cross. All donated funds were matched dollar per dollar by MAPEI, doubling the \$1,555 in donations to \$3,110. This meant that each relief fund – Hurricane Florence and Hurricane Michael – received \$1,555 from MAPEI employees.

over the course of one day, architects, engineers, contractors and manufacturers' representatives renovated the hostel's conference room, interior training area, dining room, children's playground, garden and green area. As always, it was a great day's work for a worthwhile cause."

In support of AEC Cares ProjectHouston, "MAPEI supplied 70 bags of **Planiprep™ SC**, our fiber-reinforced, cement-based skimcoating compound," Granatowski continued. "The **Planiprep SC** created a smooth, even floor surface in the interior rooms. The rapid-setting compound is perfect for use in a blitz-build installation, as flooring can be installed 30 to 60 minutes after application. And, when you only have one afternoon, speed and durability count."

Overhead Repair Solutions

MAPEI: Your single-source provider from restoration to protection

System solutions for bridge restoration

Column Repair Solutions

Bridge Deck Solutions

Overhead Repair Solutions

1. Reinforcing steel
2. *Mapeshield™ I* (anticorrosion galvanic anode)
3. *Planitop® XS* (hand-applied repair mortar) or *Planitop 12 SR* (low-pressure spray mortar)
4. *Elastocolor® Coat* (protective and decorative coating)

Column Repair Solutions

1. *Planibond® 3C* (corrosion inhibitor)
2. *Planitop 11 SCC* (self-consolidating concrete mix with silica fume and corrosion inhibitor) or *Planitop XS* (hand-applied repair mortar) or *Planitop 12 SR* (low-pressure spray mortar)
3. *MapeWrap® Primer 1* (saturant)
4. *MapeWrap 11* or *MapeWrap 12* (epoxy smoothing putty)
5. *MapeWrap 31* or *MapeWrap 21* (epoxy saturant)
6. *MapeWrap C Uni Ax 300* or *600* (carbon fiber fabric)
7. *MapeWrap 31* (epoxy saturant)
8. Sand broadcast
9. *Elastocolor Coat* (protective and decorative coating)

Bridge Deck Solutions

1. *Mapefer™ 1K* (anticorrosion coating)
2. *Planitop 18 ES* (very rapid-hardening repair mortar with extended working time) or *Planitop 18* (very rapid-hardening repair mortar) or *Planitop 18 TG* (very rapid-hardening, trowel-grade, high-early-strength repair mortar)
3. *Planiseal® LVB* (crack healer/sealer)
4. *Planiseal Traffic Coat FS* (fast-setting epoxy overlay for bridge decks)



MAPEI USA
MAPEI Canada






MAPEI's
TALL TALES

“Work and art are linked by passion and never to be separated.”

– MAPEI founder Rodolfo Squinzi



Here's another tale from a book of short stories about projects of historical significance where MAPEI products played a role. These amusing “tall tales” share a whimsical look at MAPEI from some very funny points of view — from Napoleon to the floors of the Vatican library. In this issue, we take a look at MAPEI's role in preserving the walls of the Solomon R. Guggenheim Museum.

Solomon R. Guggenheim Museum, New York City

When art talks, museums listen

We began suspecting something was amiss early in 2006. When the Museum was closed to the public in the evening, a group of people would often remain standing around without as much as a glance our way. They kept touching the walls, taking small core samples, inspecting the building's structural parts, noses even wrinkling every now and then.

We started worrying. So, a couple of Kandinskys called over the two custodians, the ones with the heavy sullen looks that make you think they sing dark Russian folk songs on festive occasions. Anyway, Russian émigrés always see eye-to-eye. They were nearly speechless when they found out. So were we.

The Guggenheim had problems. Big problems. The six-story building on Fifth Avenue, the one that Wright designed with its signature spiral ramp – you know, the museum that even non-art lovers visit in New York – was not at all well. Seeping penetration of carbon dioxide, oxygen and water had formed cracks, deteriorating the building's skin... and threatening those of us inside.

Something had to be done. We all got together that night, as we often do when we feel like a chat. This time it was different.

The Rousseaus, Braques, Picassos, Légers, Mondrians, Klees, Pollocks and all the others were worried too. Each showed it in a different way. Colors flared. Lines swelled. But no one came up with an idea when canvassed.

Then, the Modiglianis spoke up. “We know of an Italian company. It has a subsidiary here in the States called MAPEI Corporation. We can count on them. They're Italian too. Let's get them in.”

The decision to hire MAPEI was approved by the Museum's board and foundation and by the New York-based Integrated Conservation Resources. The work was soon under way. The task was formidable. MAPEI brought in **Planitop X**, **Elastocolor Rasante**, **Mapefer** and **Mapelastic**, to name just the big trouble-shooters.

The upshot? Amazing. Two years of work ensued and, by 2009, the museum was as good as new.

You're probably wondering how a collection of paintings managed to convince the Guggenheim's board to award the contract to MAPEI. Easy. Art communicates. It's always got something to say. It speaks to everyone. People have ears too.



HOMES, SWEET HOMES

MAPEI helps wounded warriors find
comfort in new smart homes

“Your valor kept us safe from danger.
May this home keep you safe always.

Thank you
— MAPEI”



The above quote was written by Jeff Johnson, Business Manager for MAPEI's Floor Covering Installation Systems line. “They asked me to provide a few words for a brick,” he said. “I tried to think of something that could come close...” His voice trailed off as the emotion and the impact of the project become apparent.

The project in question is MAPEI's donations in support of the Gary Sinise Foundation and its R.I.S.E. (Restoring Independence Supporting Empowerment) program, which builds specially adapted smart homes for wounded veterans nationwide. “I'm just the lucky guy who answered the phone,” Johnson said, downplaying the fact that, since 2015, he has been the point person keeping MAPEI's involvement alive. Along with processing requests for donated products, Johnson attends home dedication ceremonies wherever and whenever possible. It has become a project that is close to his heart.

As it happened, that initial phone call was the result of MAPEI's involvement with the National Wood Flooring Association (NWFA). "The Foundation was getting their wood flooring donated from a NWFA member who in turn recommended that they contact us for the adhesives. They knew that we would have not only adhesives, but also mortars and grouts," Johnson explained. "I answered the phone and knew right away that this was something that MAPEI would want to participate in. It is a privilege to be able to help wounded soldiers return to a secure and rewarding life after service in the protection of our country."

Support from the ground up

Started in 2009 by actor and veterans advocate of over 40+ years Gary Sinise and his eponymous foundation, the R.I.S.E. program constructs specially adapted smart homes for wounded veterans. The 100% mortgage-free homes are adapted to accommodate the veterans' physical needs in order to help ease the challenges faced by these brave men and women – and their families. It is all too easy to take everyday life for granted. However, when you have to rely on a caregiver for everything – even for the smallest task – having a measure of independence provides a degree of normalcy in a life suddenly blasted apart.

When Johnson answered that first phone call in 2015, MAPEI swung into action, ensuring that whatever products were requested would be delivered to the jobsite. For that first job, MAPEI supplied mortars, grouts and adhesives for the installation of tile and stone, wood, carpet and vinyl flooring in the home of U.S. Marine Staff Sergeant (Ret.) Jason Ross of Fallbrook, CA.

Ross' story is one of uncommon determination. After his first enlistment, he changed his focus to Explosive Ordnance Disposal (EOD) – diffusing bombs. During his second deployment in Afghanistan, in March 2011, he was severely injured – losing both of his legs and a part of his pelvis – when an improvised explosive device (IED) exploded. Since that day, he has had more than 240 surgeries, living his life in and out of hospitals. The specially adapted smart home that he received from the R.I.S.E. program is designed for his needs, as well as those of his caregiving parents and his young daughters, who all live with him. Built with tolerances designed for his power chair, the home allows Ross to be more functional, more comfortable and more independent.

Johnson was on hand when Ross and his family received the keys and the iPad to their custom-built, smart home. The brick with Johnson's quote was placed at the base of a flagpole, along with bricks from other sponsors, including NWFA, National Tile Contractors Association (NTCA) and National Association of Home Builders (NAHB).

That was MAPEI's first house with the R.I.S.E. program, but it was far from the last. Since then, MAPEI has donated products to 31 R.I.S.E. homes throughout the United States. At the most recent home dedication, on March 14, 2019, MAPEI's support was again on display as company representatives helped to welcome United States Army Captain (Ret.) Jake Murphy to his new smart home in Flower Mound, TX.



Captain (Ret.) Jake Murphy,
Lisa Murphy and their children



A West Point graduate, Murphy was deployed to Kandahar, Afghanistan, as a commissioned infantry officer and served as the executive officer for his platoon. On July 23, 2011, while on a mission in the Regional Command South area, Murphy stepped on an IED. The resulting blast cost Murphy both of his legs and caused a brain injury that put him in a monthlong coma. He was evacuated to Germany. "When you're sent to Germany, it pretty much means you're about to breathe your last," Murphy said. His parents and girlfriend (now wife) Lisa immediately flew to his side only to be told he might never wake up. Murphy proved the doctors wrong, waking from his coma after four weeks to be flown to Walter Reed National Military Medical Center – a double amputee with the determination to live. He married Lisa, learned to walk with prosthetic legs and started a family, but he faced the challenge of living in a non-wheelchair-accessible home. Enter the Gary Sinise Foundation's R.I.S.E. program, the customized house, and the home dedication ceremony on a sunny morning.



Although Sinise was unable to attend the event, he sent a letter that read, in part: "Special individuals like Jake Murphy willingly place themselves in harm's way on dangerous battlefields around the world to make our lives safer here at home. I personally believe that, as citizens who benefit from the service and sacrifice of these brave heroes, serving and honoring the needs of our military service members, and their families, before, during, and after the battle, is something we can all share. We can always do more to ensure our returning warriors are welcomed back into their communities with the resources to begin a new life."

Murphy was humble in his gratitude. "This new smart house will make life a little easier," he said. "I can't say enough how great this place is."



"It is an honor and a privilege to work with the Gary Sinise Foundation, and to help soldiers like Captain Murphy and his family who have sacrificed so much in order to protect us," said Jennifer Kramer, MAPEI Marketing Communications Manager. Kramer attended the home dedication ceremony with Kyle Murphy, MAPEI Central Area Sales Director, and Dale Penland, MAPEI Business Development Leader.

"Due to our wide and varied product lines, we are in a unique position to provide products that will help make our returning vets' lives more comfortable," MAPEI's Murphy said. "This opportunity to work with our industry partners, including the NWFA, NTCA and NAHB, as well as the Gary Sinise Foundation, is a great way to support a worthwhile cause."

MAPEI will continue to support that worthwhile cause through the donation of installation materials for additional smart homes planned for the foreseeable future. The R.I.S.E. homes are planned for sites throughout the United States, including Florida, California, Utah, Colorado, Texas and Tennessee.



Johnson summed up the program and MAPEI's involvement: "We believe that this is a sound and effective way to support a very important cause. We are in a unique position to provide products to help our wounded heroes, and that is an opportunity that cannot be passed up. As Gary Sinise states: 'While we can never do enough for our defenders and their loved ones, we can always do a little more.'"



Planislope™ RS

Rapid-Setting, Polymer-Modified Sloping Mortar

Planislope RS is a rapid-setting, pre-blended, cement-based, polymer-modified mortar that includes a blend of selected aggregates for use in sloping and thick-bed mortar installations. It only needs mixing with water to produce a mortar of exceptional strength. Used for preparing a substrate before the installation of tile and stone, Planislope RS is designed for pre-sloping under waterproofing membranes and mortar beds in showers when quick turnarounds are desired.

Features and Benefits

- Rapid-setting: Set tile in 1 to 2 hours
- Pre-blended: Requires no jobsite blending of powders or additives
- Polymer-modified; mix with water for most interior/exterior installations
- Screed, float and level from 1/4" to 3" (6 mm to 7.5 cm)
- Can be applied up to 3" (7.5 cm) thick for leveling and ramping on horizontal substrates
- Can be applied up to 5" (12.5 cm) thick for use in trenches
- Formulated for wet and dry environments
- Smooth finish

Uses

- For interior/exterior environments for residential and commercial installations on walls and floors in wet and dry areas
- For use as a bonded or unbonded, conventional, thick mortar bed
- Ideal to float shower pre-slopes and bases
- For leveling, screeding, ramping and trench applications
- For areas where leveling, flattening or contouring of finished floor height is required
- For areas where floor flatness is critical, such as when tiles with any edge longer than 15" (38 cm) are specified
- For concrete substrates that are cracked or present bonding issues
- For areas with in-slab hydronic tubing

See full product details at www.mapei.com.



Product Performance Properties mixed as dry-pack at 73°F (23°C) and 50% relative humidity

Laboratory Tests	Results
Application temperature range	45°F to 95°F (7°C to 35°C)
Compressive strength – ASTM C109	
4 hours	1,500 to 2,000 psi (10.3 to 13.8 MPa)
24 hours	2,000 to 3,000 psi (13.8 to 20.7 MPa)
7 days	3,000 to 4,000 psi (20.7 to 27.6 MPa)
28 days	4,000 to 5,000 psi (27.6 to 34.5 MPa)
Shrinkage, 28-day cure – ASTM C157	0.1%
Flexural strength – ASTM C348	940 to 1,500 psi (6.48 to 10.3 MPa)
VOCs (Section 01350 of California's CDPH)	Passed
VOCs (Rule #1168 of California's SCAQMD)	0 g per L

Shelf Life and Application Properties

Shelf life	1 year when stored in original, unopened packaging at 73°F (23°C)
Pot life at 68°F (20°C)	25 to 30 minutes
Color	Gray
Cleanability	With water while fresh
Application temperature range	45°F to 95°F (7°C to 35°C)

Packaging

Size
Bag: 50 lbs. (22.7 kg)

Approximate Coverage*

Thickness	Coverage
1/2" (12 mm)	10 to 12 sq. ft. (0.93 to 1.11 m ²)
1" (2.5 cm)	5 to 6 sq. ft. (0.46 to 0.56 m ²)
2" (5 cm)	2.5 to 3 sq. ft. (0.23 to 0.28 m ²)

* Coverage shown is for estimating purposes only. Actual jobsite coverages may vary according to substrate conditions and setting practices.

Mapecontact™ MRT and Mapecontact SRT

Moisture-Resistant Tapes for Flooring Installation

Mapecontact MRT and Mapecontact SRT double-sided tapes are MAPEI's solutions for installing floor coverings rapidly and permanently. Use Mapecontact MRT to install all types of resilient flooring. Use Mapecontact SRT to install resilient flooring as well as prefinished engineered or solid wood, and Mapecontact SRT has the additional benefit of sound reduction. Both Mapecontact tapes provide instant bond, emit no odor or VOCs, offer unlimited working time, allow for immediate traffic on residential and commercial floor installations, and can be installed without moisture testing.

Features and Benefits

Mapecontact MRT

- Instant use; no waiting for an adhesive to cure
- Resistant to high moisture
- Permits immediate foot traffic

Mapecontact SRT

- Instant use; no waiting for adhesive to cure
- Moisture barrier with sound-reduction properties
- Allows immediate foot traffic

Uses

Mapecontact MRT

- Approved for use with vinyl tile, vinyl plank, virgin smooth-backed rubber flooring, vinyl and rubber wall base, natural and prefinished cork flooring, and cork underlayments on floors and walls
- Interior residential (rental apartments, condominiums and homes)
- Interior commercial (office buildings, hotel rooms/hallways and restaurant dining areas)
- Interior heavy commercial (hotel lobbies, convention centers, airports and department stores)
- Interior institutional (hospitals, schools, universities, libraries and government buildings)

Mapecontact SRT

- Approved for use with solid vinyl sheet, vinyl tile, vinyl plank, solid and engineered exotic and domestic wood flooring of any width and length, finger block parquet, acrylic impregnated wood, laminated plank, bamboo, prefinished cork flooring and cork underlayments
- Interior residential (rental apartments, condominiums and homes)
- Interior commercial (office buildings, hotel rooms/hallways and restaurant dining areas)

See full product details at www.mapei.com.



Shelf Life and Product Characteristics

VOCs (Rule #1168 of California's SCAQMD)	Adhesive tape is exempt from SCAQMD Rule #1168.
Color	Clear
Shelf life	2 years when stored in original, unopened packaging at 73°F (23°C)
Storage conditions	40°F to 90°F (4°C to 32°C)

Packaging and Coverage

Size	Coverage
Roll: 3 ft. x 166 ft. (0.91 x 50.6 m)	498 sq. ft. (46.3 m ²)
Roll: 1 ft. x 166 ft. (0.30 x 50.6 m)	166 sq. ft. (15.4 m ²)
Roll: 6" x 166 ft. (15 cm x 50.6 m)	83 sq. ft. (7.71 m ²)
Roll: 3" x 166 ft. (7.5 cm x 50.6 m)	41.5 sq. ft. (3.86 m ²)



Shelf Life and Product Characteristics

VOCs (Rule #1168 of California's SCAQMD)	Adhesive tape is exempt from SCAQMD Rule #1168.
Color	White
Shelf life	2 years when stored in original, unopened packaging at 73°F (23°C)
Storage conditions	40°F to 90°F (4°C to 32°C)

Packaging and Coverage

Size	Coverage
Roll: 3 ft. x 166 ft. (0.91 x 50.6 m)	498 sq. ft. (46.3 m ²)
Roll: 1 ft. x 166 ft. (0.30 x 50.6 m)	166 sq. ft. (15.4 m ²)
Roll: 6" x 166 ft. (15 cm x 50.6 m)	83 sq. ft. (7.71 m ²)
Roll: 3" x 166 ft. (7.5 cm x 50.6 m)	41.5 sq. ft. (3.86 m ²)

SOUNDS OF SILENCE

Take your pick of MAPEI's sound-reduction options for multi-floor buildings



Good noise control makes good neighbors, especially for those living or working in multi-floor buildings. Noise is a top complaint among condominium owners. While most condo associations require the installation of sound-reducing products before the installation of flooring, some board members make rules that are too strict – or not strict enough.

When building construction is planned, sound reduction must be factored in. The flooring's setting material and slab thickness all play a part in the sound rating. Plus, carpet, wood and vinyl reduce sound better than tile.

Sound-reduction products are a growing trend in the building industry. They diminish the transfer of sound from one floor to the floor below, and even sound within the walls of a room.

An acoustics engineer needs to compute and quantify the loss of sound transmission with the use of sound-reduction products, through either walls or the floor below. Sound-reduction products in conjunction with or without their assemblies (with or without a suspended ceiling) can be tested for three ratings:

- Sound Transmission Class (STC), which measures isolation of airborne sound (loud music, for example) by the entire assembly
- Impact Insulation Class (IIC), which measures isolation of impact sound (high heels, for example) by the entire assembly
- Delta IIC, which measures isolation of impact sound (high heels, for example) by a flooring product

Testing for airborne sound (STC)

In layman's terms, the STC rating determines approximately how much a floor, wall and/or ceiling in a room reduces (or "attenuates") sound transmission. The industry test standard for STC ratings is ASTM E90, from ASTM International.

The following testing method summary is provided courtesy of NGC Testing Services, one of the most sophisticated, fully accredited, independent testing facilities in North America. However, the ASTM procedures are standard.

1. To conduct the STC test, loudspeakers are placed in a room, called the Source Room, with their locations determined by the spatial and statistical requirements of ASTM E90.



Photo courtesy of NGC Testing Services

2. Microphones are placed in the Source Room and in a room beneath, referred to as the Receiving Room. The microphone locations in this room are also determined per ASTM E90 requirements.
3. A Random Noise field is produced using the loudspeakers in the Source Room, and measurements are taken at each microphone location in each room.
4. The difference between the two rooms' average sound levels is measured, with the difference being corrected to account for the Receiving Room's sound absorption. The resulting number is the Transmission Loss, which is used to calculate the STC value. The higher the STC rating, the better the reduction of airborne noise.

The typical minimum building code requirement for STC protection is 50. However, this number can change from area to area.

Testing for impact sound (IIC and Delta IIC)

The industry test standard for IIC sound ratings is ASTM E492. As with the STC testing information, the following steps are

provided courtesy of NGC Testing Services, but the ASTM procedures are standard.

1. To conduct these tests, a tapping machine with steel-faced hammers is placed in the Source Room at four well-defined locations on the floor-ceiling assembly.
2. Microphones are placed in the room beneath, referred to as the Receiving Room, at specific locations per spatial and statistical requirements of ASTM E492.
3. Tapping-machine hammers strike the floor of the Source Room, and the sound levels in the Receiving Room are measured and averaged.
4. The average sound levels measured in the Receiving Room are corrected to account for the Receiving Room's sound absorption. These levels are applied to a standard IIC curve, and the IIC value is calculated. The higher the IIC rating, the better the reduction of impact noise.

As with STC requirements, the typical minimum building code requirement for IIC sound ratings is 50. This number, however, can change from area to area.

Testing for Delta IIC is essentially the same as for testing IIC, with the same measurement test procedure being used

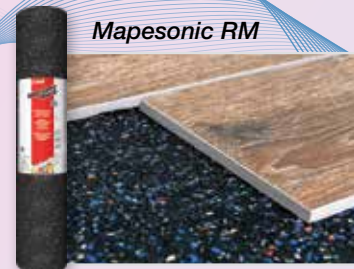
MAPEI's sound-reduction options



Mapeguard 2



Mapesonic 2



Mapesonic RM



Ultrabond ECO 985



Ultrabond ECO 995



Mapecontact SRT

Sound ratings for MAPEI products*

	No suspended ceiling	Suspended gypsum ceiling
Mapeguard 2 (for porcelain tile over 6" or 15 cm concrete slab)	52 STC; 47 IIC	66 STC; 64 IIC
Mapesonic 2 (for porcelain tile over 6" or 15 cm concrete slab)	52 STC; 50 IIC	66 STC; 70 IIC
Mapesonic RM (3/16" or 5 mm thick membrane over 6" or 15 cm concrete slab)	54 STC; 50 IIC	63 STC; 62 IIC
Ultrabond ECO 985 (for solid wood over 6" or 15 cm concrete slab)	52 STC; 44 IIC	66 STC; 68 IIC
Ultrabond ECO 995 (for engineered wood over 6" or 15 cm concrete slab)	50 STC; 50 IIC	67 STC; 68 IIC
Mapecontact SRT (for engineered wood over 6" or 15 cm concrete slab)	50 STC; 50 IIC	61 STC; 70 IIC

* See details on the products' Technical Data Sheets.

as in IIC measurement. However, there are differences. First, the main structure over which test samples are tested is a 6" (15 cm) standard concrete floor without any material installed but a floor covering. Second, the Delta IIC rating is calculated differently than the IIC rating: The differences in measured impact sound levels are subtracted from the levels historically defined in the standard, and these differences are then used to calculate the Delta IIC rating.

Solutions for reducing sound transmission

Whether sound-reduction membranes are needed for a high-rise condominium, an apartment block or an office building, MAPEI has innovative solutions for those living and working in close proximity:

- **Mapeguard[®] 2:** A flexible, 40-mil thin, lightweight, load-bearing, fabric-reinforced "peel-and-stick" membrane for crack isolation and sound reduction
- **Mapesonic[™] 2:** A flexible, 76-mil thin, lightweight, load-bearing, fabric-reinforced "peel-and-stick" membrane for sound reduction and crack isolation
- **Mapesonic RM:** A high-performance, recycled-rubber membrane designed to reduce

sound and isolate cracks in ceramic tile and stone installations

MAPEI also manufactures two wood-flooring adhesives that offer built-in properties of sound reduction and moisture control:

- **Ultrabond ECO[®] 985:** A single-component, moisture-curing adhesive with a hybrid-polymer-based formulation, for all types of wood flooring and bamboo
- **Ultrabond ECO 995:** A single-component, moisture-curing adhesive with a urethane formulation, for all types of wood flooring and bamboo

There's also MAPEI's new, sound-reducing tape for installing resilient and wood flooring:

- **Mapecontact[™] SRT:** A double-sided, foam-core, moisture-resistant, dry-film tape for rapidly and permanently installing solid vinyl sheet, vinyl tile, vinyl plank flooring, prefinished engineered wood and solid wood

When it comes to reducing sound transmissions inside buildings, MAPEI has the innovative products and the technical expertise to "clean up" noise pollution.



About the author:

Denise Troiano

Denise brings 24 years of experience in the tile, stone and installation products industry to MAPEI. Working with manufacturers, retailers, designers and installers during this span has allowed her to answer a wide range of questions from homeowners and industry professionals in her role as a MAPEI Technical Services team member.



The Met Philadelphia – Philadelphia, PA, USA

THE SHOW MUST GO ON

Repair mortars and a customized coating help to revive a historic theater

Overview: MAPEI's concrete restoration products were used extensively to restore the facade of the historic theater now known as The Met Philadelphia. And working with the owners and historic conservators, MAPEI developed the new product **Elastocolor Texture** to help repair and restore the Classical Revival style building to its original glory.

In 1908, when the massive building opened, it was the largest theater of its kind in the world. Home to the Philadelphia Opera Company and built by the company's owner, Oscar Hammerstein I (grandfather of the famed composer Oscar Hammerstein III), the Philadelphia Opera House was the sparkling jewel in Philadelphia's thriving arts community. In 1910, the Hammerstein family sold the Opera House to the New York Metropolitan Opera. Renamed as the Philadelphia Metropolitan Opera House, the beautiful Classical Revival theater with superior acoustics continued to draw crowds of music lovers.

Film killed the opera diva

By the 1920s, the crowds were clamoring for a new art. The theater adapted and began showing silent films as well as staging operas.

After the Stock Market Crash of 1929 and the ensuing Great Depression, interest in the theater waned. Opera performances declined at the theater and eventually ended. The films moved to their own "palaces" (movie theaters) built especially for the exhibition of motion pictures.

The Metropolitan Opera House building briefly became a public ballroom. Next, it was purchased by a sports promoter who turned the orchestra pit into a basketball court.



Finally, in 1954, the building became a church designed to minister to the needs of the surrounding neighborhood, whose fortunes had also declined along with those of the venerable theater building.

Although it was officially added to the National Historic Registry of Places in 1972, by the late 1980s the Opera House was all but abandoned and had begun to deteriorate. In 1996, it was in danger of demolition by the City of Philadelphia. The building was saved when another church, this time the Holy Ghost Headquarters Revival Center led by Rev. Mark Hatcher, purchased the property and began renovation efforts. In 2017, Holy Ghost Headquarters and developer Eric Blumenfeld established a joint ownership agreement and large-scale renovation efforts to begin restoring the building to its former glory, now rebranded as The Met Philadelphia.

MAPEI products on the jobsite

“Blumenfeld is the developer who is playing a large role in the revitalization of Philadelphia’s N. Broad Street area,” said David Marofsky, MAPEI’s Concrete Restoration & Waterproofing Specialist for Pennsylvania, Ohio, Delaware and Southern New Jersey. “He knew the building’s history and its importance to the neighborhood. He wanted to be sure that it was faithfully restored.”

As part of the larger N. Broad Street area renaissance, Blumenfeld worked with Culbertson Restoration Ltd. and their highly trained crews of weatherproofing and exterior facade restoration experts.

For this project, he was joined by superintendent Mike Kirchhoff and project manager Mark Meighan. “Historic renovations are one of our specialties,” Kirchhoff said. “It has been great to see this area of town coming back to life.”

For the Metropolitan Opera House building, that resuscitation – on the building’s exterior – came with help from Culbertson and MAPEI. “MAPEI was involved very early on in the specification process,” Marofsky said. “We worked with the owners and with Culbertson for a little more than a year before construction actually started in the Fall of 2017. The repair mortars were easy. We wanted to get the exact right color and texture of the coatings.”

Kirchhoff concurred. “The existing original coating was a cementitious type, and not all of it would be removed. We wanted to be sure to match its color and texture with the repaired pieces. That meant that we needed a coating that had a sandier texture than the existing coatings that we were looking at.”

MAPEI has a solution for every problem... and can create a new product solution if needed, according to Rankin Jays, MAPEI’s Business Development Leader – Coatings. “We were in the throes of developing a heavier-textured coating,” he added, “and this project came along at the right time.”

MAPEI’s lab in Deerfield Beach, FL, worked with Jays, Marofsky and Kevin Smith, MAPEI’s Director of Concrete Restoration



Systems (CRS), to find the exact right color and texture to match the specifications for the historic building. The resulting product was *Elastocolor Texture*, a water-based, acrylic, high-build, high-performance textured coating. “The lab worked quite hard to push it through,” Jays said.

Elastocolor Texture was designed to be the topcoat on several repairs utilizing MAPEI’s CRS products. “We had a wide variety of concrete repairs on that facade,” Kirchhoff explained. “Repairs ranged from brick patch work to replacement, cement cornice repair and/or replacement and concrete repair – in some instances there were exposed steel members.”

The building’s intricately detailed cornices had been originally created from shaped plaster that was poured over a brick foundation. “The cornices form a band of poured concrete around the building and there are three different types of cornice profiles,” Kirchhoff said. “Each floor has its own cornice band. This means there is a top cornice, a middle cornice and a bottom cornice.”

For repairs in the larger areas of the band, the Culbertson crew used MAPEI’s *Planitop 15*, a form-and-pour, one-component, cementitious, fiber-reinforced repair mortar. “This created a surface that is very smooth, almost like glass,” Kirchhoff stated. “For the smaller, more intricate areas where the cornices have fine details, we used *Planitop X* or *Planitop XS* depending on the working time needed.” *Planitop X* is a one-component, fast-setting, fiber-reinforced, vertical and overhead repair mortar, while *Planitop XS* provides the same properties with an extended working window.

Because the building had fallen into such a state of disrepair, the facade needed some extra care. “There were areas where we were repairing rebar, and then there were sections where actual steel members were exposed,” Kirchhoff said. “The steel members were blast-cleaned to the NACE No. 2 / SSPC-SP 10 standard for Near-White metal.” They were then protected with MAPEI’s *Mapefer 1K* corrosion-inhibiting coating for reinforcing steel and then covered with *Planitop X* or *Planitop XS*. This was topped by *Elastocolor*

Texture applied via brush (or roller in the more intricately detailed areas).

“The lab color-matched the existing colors perfectly,” Marofsky said. “The repaired brick work was coated with *Elastocolor Coat* in gray, and the concrete was coated with *Elastocolor Texture* in a light gray. This is the application of the *Elastocolor Texture* that was developed specifically for the project.”

When asked about the project’s biggest challenges, Kirchhoff does not mention finding and developing the coating. Both he and Marofsky agree that Jays and the MAPEI R&D team in Deerfield Beach made the process easy.

“Blasting while working around trades and scheduling the scaffold were the main challenges on this project,” Kirchhoff recounted. “The blasting itself wasn’t the issue. It was the scheduling. Working around the other trades on the enclosed scaffold and actually getting time was not easy. The scheduling was so impacted, and the scaffold was so busy because this was one of the wettest seasons we’d had – in fact, I think it was the wettest in recent history. So, working with the GC for access around all the other teams was a bit of a challenge for us all.”

But persistence and good calendaring paid off.

“When we first started the job, the building had tree stumps literally growing out of the windows,” Kirchhoff explained. “When we finished, it was again the historic showplace it once was.”

The Met Philadelphia is now back in business as a mixed-use venue, housing Holy Ghost Headquarters and Live Nation concerts. The reincarnated space officially opened on December 3, 2018, with a concert by folk legend Bob Dylan. And as the spotlights turned on, the facade was once again lit up in all of its Classical Revivalist glory, thanks to the Culbertson crew and MAPEI.

TECHNICAL DATA

The Met Philadelphia – Philadelphia, PA, USA

Year of construction: 1908

Years of MAPEI involvement: 2017-2019

Where MAPEI products were used: *Planitop*® 15 on cornices and facades, *Mapefer*™ 1K on exposed rebar and reinforcing steel members, *Planitop X* and *Planitop XS* on cornices, *Elastocolor*® Coat on concrete and masonry, and *Elastocolor Texture* on concrete and masonry

Project owner: Holy Ghost Headquarters and Eric Blumenfeld

Architects: Original architect, William H. McElfatrick; current architect, Atkin Olshin Schade Architects (AOS Architects)

Installer: Culbertson Restoration Ltd.

MAPEI distributor: Thoro System Waterproofing

MAPEI coordinator: David Marofsky, Joe Markert, Rankin Jays

Challenges: Create a new high-performance coating to match the texture and color of existing historic

coatings; schedule work on a congested scaffold impacted by weather issues

MAPEI Products

External concrete repairs: *Planitop 15*

External concrete repairs: *Planitop X*, *Planitop XS*

External rebar and steel member repairs: *Mapefer 1K*

External concrete and masonry repairs: *Elastocolor Coat*, *Elastocolor Texture*

STRAIGHT-UP FIXES

Two new products simplify vertical repairs



Overhead and vertical concrete repairs are notoriously tricky, requiring just the right mortar mix. If the repair mortar is too wet, it will slump and sag; if it's too dry, it will crumble out of the defect. MAPEI's new concrete repair mortar **Planitop® VO** and latex admixture **Planicrete® LA** are designed to solve that dilemma.

Planitop VO

One-component, vertical and overhead repair mortar

Planitop VO is a cementitious, vertical and overhead repair mortar that exhibits early strength and extended working time. (Note: *Planitop VO* is not sold in Canada.)

Features and benefits

- Can be applied from 1/4" to 1-1/2" (6 mm to 3.8 cm) in depth
- Provides high early strength with an extended working time
- Can be mixed with potable water or with *Planicrete LA*
- Increased resistance to freezing/thawing

Uses

- Interior and exterior
- Suitable for below-grade, on-grade and above-grade vertical and overhead applications

Product Performance Properties*

Laboratory Tests	Results	
	With water	With <i>Planicrete LA</i>
Compressive strength – ASTM C109		
1 day	3,500 psi (24.1 MPa)	4,000 psi (27.6 MPa)
7 days	6,000 psi (41.4 MPa)	6,200 psi (42.8 MPa)
28 days	7,800 psi (53.8 MPa)	8,000 psi (55.2 MPa)
Flexural strength – ASTM C348		
28 days	900 psi (6.21 MPa)	1,500 psi (10.3 MPa)
Slant/shear bond strength – ASTM C882 (modified)		
28 days	1,800 psi (12.4 MPa)	2,000 psi (13.8 MPa)
VOCs (Rule #1168 of California's SCAQMD)	0 g per L	

* All tests were performed at 73°F (23°C) and 50% relative humidity with a mixture of 1 U.S. gal. (3.79 L) of water or 1 U.S. gal. (3.79 L) of *Planicrete LA* per 50-lb. (22.7-kg) bag of *Planitop VO*.

Application Properties

Mixing ratio	1 U.S. gal. (3.79 L) of water or 1 U.S. gal. of <i>Planicrete LA</i> per 50 lbs. (22.7 kg) of <i>Planitop VO</i>
Working time	15 to 20 minutes
Initial set – ASTM C191	Minimum 30 minutes
Final set – ASTM C191	120 minutes

CSI Division Classifications

Cast-in-Place Concrete	03 30 00
Cementitious Decks and Underlayment	03 50 00
Concrete Restoration and Cleaning	03 90 00

Packaging

Size
Bag: 50 lbs. (22.7 kg)

Planicrete LA

Acrylic latex admixture for mortar and concrete

Planicrete LA is a one-component, liquid latex admixture used to enhance the performance of cementitious repair mortars, plasters, stuccos, concrete mixes and toppings for the restoration of horizontal, vertical and overhead concrete, as well as concrete masonry units (CMU).

Features and benefits

- Ready to use
- Enhances bond
- Improves durability
- Non-reemulsifiable

Uses

- Use as an admixture with MAPEI's *Planitop VO* or *Mapecem® 100* for horizontal, vertical and overhead exterior and interior concrete repairs
- Use as an admixture with cement plaster and stucco
- Use as an admixture with Portland cement for slurry bond coats

Product Performance Properties

Laboratory Tests	Results
Physical state	Liquid
Color	Off-white
Density	8.51 lbs. per U.S. gal. (1.02 g per mL)
Flammability	Flame spread: 0 Fuel contribution: 0 Smoke development: 0
pH	6 to 8
Application temperature range	45°F to 95°F (7°C to 35°C)

Shelf Life

Shelf life	1 year in original container, sealed airtight and stored in a dry, heated and covered place
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Protect containers from freezing in transit and storage. Provide for heated storage on site and deliver all materials at least 24 hours before work begins.

CSI Division Classifications

Common Work Results for Concrete	03 05 00
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Packaging

Size
Jug: 1 U.S. gal. (3.79 L), 2 per case
Pail: 5 U.S. gals. (18.9 L)

ROPES COURSE

MAPEI helps rappelling installers to inspect/repair concrete silos

Overview: With assistance from MAPEI, officials at a Canadian cement plant devised a unique plan for inspecting and repairing the plant's storage silos. Rather than using traditional scaffolding, installers rappelled down the outer sides of the silos (each 100 feet [30.5 m] high) in order to inspect and repair degraded concrete – saving time and money in the process.

The CRH Canada Joliette Cement Plant is one of Canada's leading specialty cement suppliers. Part of the CRH Canada Group Inc., the plant has operated for more than 50 years and its technology is constantly being refined to meet the growing needs of its customers.

The plant has the ability to design, produce and deliver cement mixes that meet project- and region-specific requirements. Its four kilns operate 24 hours a day, giving the plant the unique flexibility to offer more than 10 types of cement to building materials manufacturers and construction companies from Alberta to Newfoundland. Its customer base even extends into the northeastern United States.

The CRH Canada Joliette Cement Plant uses 20 silos to store the vast amounts of cement that it produces each day. To maintain safety standards and protect residents that live near the plant, the silos are regularly inspected for concrete degradation. If any degradation is discovered, it is immediately repaired. With the size and number of silos involved, the inspection process must be detailed and continuous.

In 2017, MAPEI was awarded the contract to repair the plant's silos using **Planitop 12 SR** repair mortar. MAPEI was not awarded the contract solely on the basis of its high-quality products and expert staff – the company was also chosen for its innovative approach to the complicated logistical challenge of working on these storage silos.

MAPEI products on the jobsite

While the plant's silos are about 100 feet (30.5 m) high, they are not particularly wide and, as such, conventional scaffolding could not be easily used to complete the repairs.

"To set up the scaffolding in such a restrained area would have cost at least

CRH Canada Joliette Cement Plant – Joliette, QC, Canada



\$400,000 [about CAD \$534 000] in custom scaffolding,” said Michel Lafortune, the MAPEI representative leading the project. Instead of such a large sum being spent, Lafortune and PSM Technologies – the general contractor on the project – came up with a unique way to complete the repairs.

Lafortune and PSM proposed the idea of having subcontracted installers from Vertika climb the sides of the silos like mountain climbers and then rappel down the sides like spelunkers. “Vertika specializes in working at height,” Lafortune said. “They are also licensed to finish concrete. Their crew worked perfectly with the team from PSM Technologies and with the MAPEI product.”

Tackling one silo at a time, three Vertika crew members would rappel down the silo while two PSM team members stayed on the roof to monitor the safety gear and

the equipment. On the ground, two more PSM crew members stayed in constant contact with the facility management and made sure that all supplies reached the top as needed. Lafortune alternated between assisting at the top and on the ground.

Once in place and suspended from harnesses, the three-man Vertika team used bush hammers suspended on ropes to rout out the deteriorated areas. “We had to make sure that nobody approached the silos while we were doing the surface prep,” Lafortune said. “The bush hammers dislodged pieces of concrete, which fell to the ground creating a dangerous situation. So we cordoned off a 6-foot [1.83-m] perimeter around the base during this work.”

Next, the three-man climbing team used a pressurized pump and hose – lowered on ropes – to apply *Planitop 12 SR*. Resistant



Product Focus

Planitop 12 SR is a sulfate-resistant, one-component, shrinkage-compensated, cementitious repair mortar. *Planitop 12 SR* is fiber-reinforced, contains both silica fume and a corrosion inhibitor, and is intended for the repair of vertical, overhead and horizontal concrete surfaces.



to sulfate attack (which can deteriorate concrete and reduce concrete strength) and well suited for vertical surfaces, the one-component, cementitious repair mortar was the perfect choice for this high-flying project. “One guy sprayed, one guy finished, and one guy handed equipment to the other two. It was very smooth and sequenced – like a ballet,” Lafortune said. “It was the first time that I have seen anything like this in my 30 years of concrete repair in Quebec.”

Lafortune added, “In Europe this is a common repair technique, but this is the first time that I’m aware of this method of working at height being used for concrete in Canada, maybe in the U.S. It was a huge savings in time and money. We saved at least \$400,000 [about CAD \$534 000] on the scaffolding alone. The team was less tired because the ropes held all the equipment for them – they worked faster and accomplished more. We only

had to pause because of the winter weather. And the owner is very happy with the results and with *Planitop 12 SR*.”

The project proved to be a great success. Now protected with a MAPEI repair mortar, the plant will continue to supply cement mixes for the foreseeable future.

TECHNICAL DATA

CRH Canada Joliette Cement Plant –
Joliette, QC, Canada

Years of construction: 2017-2018

Years of MAPEI involvement: 2017-2018

MAPEI coordinator: Michel Lafortune

Where MAPEI products were used: On concrete silos

MAPEI distributor: Geroquip Inc.

Engineer: GESCO-NOREX

Installers: Vertika and PSM Technologies

Project manager: Olivier Muller

Photographer: Olivier Gariépy

Project size: Approximately 10,000 square feet (929 m²)

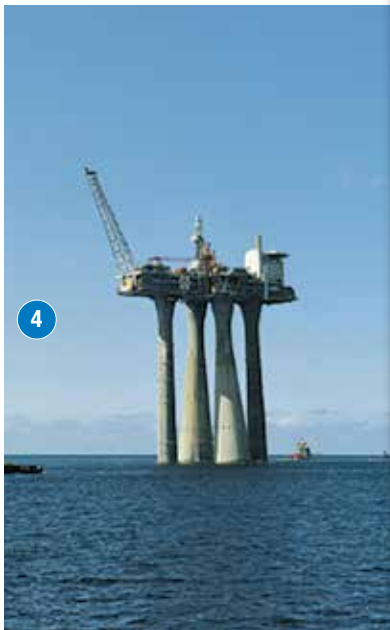
Challenges: Installers could not use traditional scaffolding and had to rappel down the sides of the silos in order to complete the repair

MAPEI Product

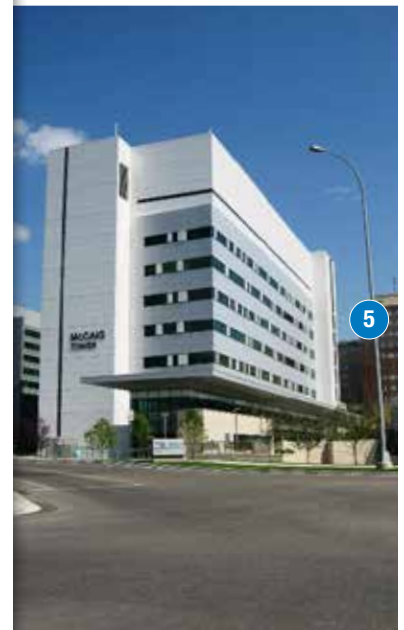
Repair mortar: *Planitop*® 12 SR



ADMIXTURE PROJECTS AROUND THE WORLD



MAPEI/GRT develops concrete admixtures and auxiliary products that are routinely used to produce high-performance, all-weather concrete mixes. The subsidiary incorporates current technology into developing next-generation chemical admixtures for every need. MAPEI/GRT has four production sites – located in Eagan, MN; Madison, IL; Garland, TX; and Swedesboro, NJ – for serving and supporting customers across the United States.



These innovative, technology-driven concrete admixtures have been used to form impressive spaces and exotic destinations around the world, from the Mercedes-Benz Museum in Germany to the U.S. Bank Stadium (home of the Minnesota Vikings) in Minneapolis, Minnesota.

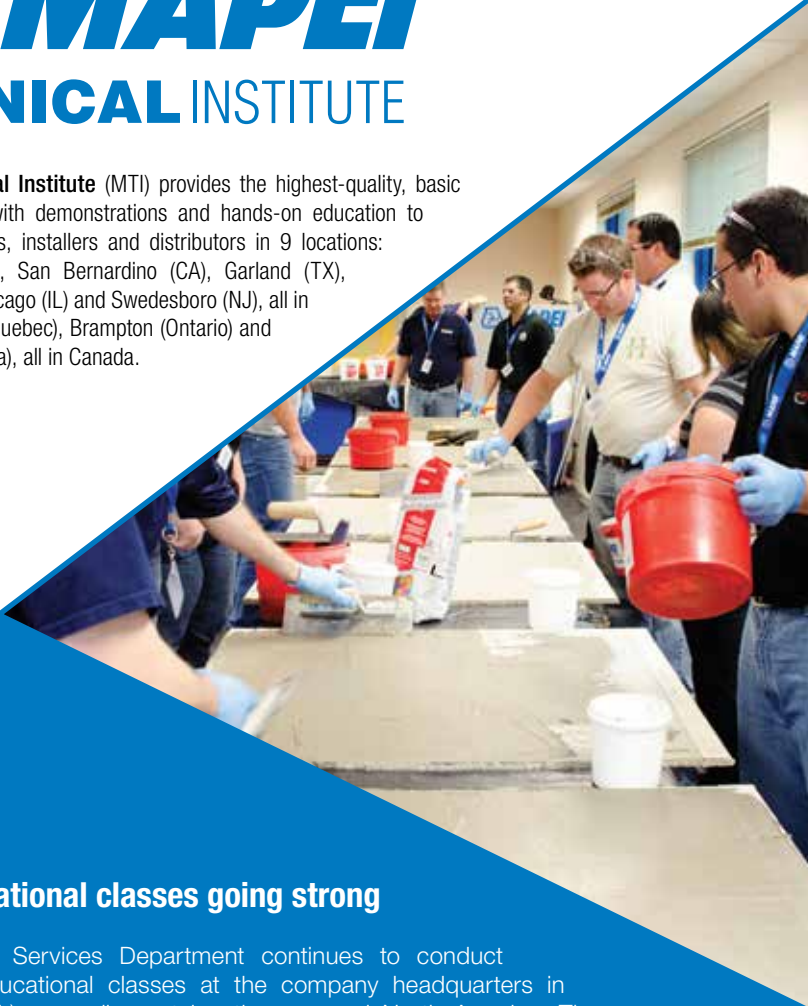
This pictorial shows projects around the world that have utilized MAPEI/GRT admixtures.

- 1 Dragon Bridge – Da Nang, Vietnam
- 2 U.S. Bank Stadium – Minneapolis, MN, USA
- 3 Mercedes-Benz Museum – Stuttgart, Germany
- 4 Troll Platform – Stavanger, Norway
- 5 Foothills Medical Centre – Calgary, AB, Canada
- 6 Three Gorges Dam – Sichuan, China
- 7 Lamborghini Museum – Sant'Agata Bolognese, Italy
- 8 Prada Foundation – Milan, Italy





The **MAPEI Technical Institute (MTI)** provides the highest-quality, basic product knowledge with demonstrations and hands-on education to architects, contractors, installers and distributors in 9 locations: Deerfield Beach (FL), San Bernardino (CA), Garland (TX), Dalton (GA), West Chicago (IL) and Swedesboro (NJ), all in the USA; and Laval (Quebec), Brampton (Ontario) and Delta (British Columbia), all in Canada.



2019 MTI educational classes going strong

MAPEI's Technical Services Department continues to conduct successful MTI educational classes at the company headquarters in Deerfield Beach (FL), as well as at locations around North America. These classes are always filled to capacity, with attendees enjoying a mix of seminars and hands-on practice. To follow the fun, follow the hashtags #MTI and #MAPEITechnicalInstitute to see photos and videos from the classes.

In addition to the MTI-TV videos on MAPEI's Website, the site offers a plethora of other educational videos. Product Spotlights provide easy ways to learn – whether you are learning about new products or refreshing your knowledge of existing products. Some of the latest videos to be uploaded include:

- **Planislope[™] RS** rapid-set, polymer-modified sloping mortar = This video shows how to apply this new product, offering tips and tricks to quickly and effectively achieve satisfactory results.
- **Mapeguard[®] WP 200** waterproofing sheet membrane for tile and stone = This step-by-step installation video is a useful tool for distributors and installers alike.
- **Planitop[®] 330 Fast** cementitious rendering mortar = This video describes the features and benefits of this versatile, quick-setting, fiber-reinforced mortar.

To see the full schedule of upcoming MTI seminars, visit the Careers & Training section at www.mapei.com.

For registration information on U.S. seminars, please contact Sophia D'Amico-Campbell at (954) 246-8555.
For registration information on Canadian seminars, please contact Marie-Christine Mercier at (450) 662-1212.

MAPEI's growth shows from coast to coast

The past eight months have been a period of growth for MAPEI Corporation. It has opened or expanded the following facilities to ensure that it remains ahead of the technology curve, as well as meeting increased production demands.

- 1 San Bernardino, California: A busy location, the West Coast facility has recently added one new powder production line.
- 2 Swedesboro, New Jersey: This location recently opened a new cutting-edge Center of Excellence research and testing lab for MAPEI and MAPEI/GRT, as well as one new powder production line.

- 3 West Chicago, Illinois: This facility has added two new powder production lines and three new packaging machines in order to meet accelerated demands.
- 4 Wildwood, Florida: This new location recently opened for distribution and warehousing.

Strategically located across the United States, these new and expanded locations allow MAPEI to better serve its customers in a timely manner. Further growth is planned for other locations in the near future.



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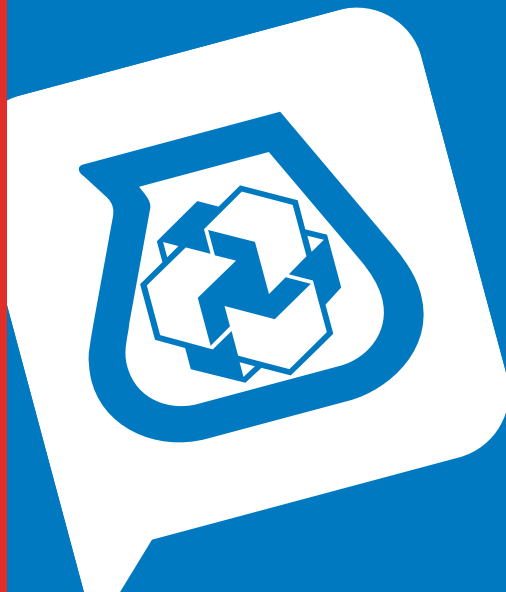
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