

Realtà MAPEI

AMERICAS



ISSUE 28

Growing in every direction



Luigi Di Geso
President and CEO,
MAPEI North America

The U.S. GDP is growing at a record pace. According to the Congressional Budget Office, the U.S. economy increased 4.1% in the second quarter of 2018. MAPEI has contributed to that growth with our own strong performance.

Across our product portfolio, we have brought many new types of products to the North American marketplace in 2018. Recent examples include **Mapeguard® Heat** waterproofing membrane for electrical floor heating (debuting first in Canada); and **Mapesonic™ RM** premium sound-reduction and crack-isolation membrane, **Mapecontact™ MRT** moisture-resistant tape for installing resilient flooring, and **Mapecontact SRT** sound-reducing, moisture-resistant tape for installing resilient and wood floors (all debuting first in the United States).

Although we have experienced growth across all of our lines, this issue of *Realtà MAPEI Americas* highlights one category that is always at the forefront of our growth – flooring. As you will see in these pages, products such as **Mapeguard WP 200** waterproofing sheet membrane and **Ultrabond ECO® 811** universal carpet tile adhesive extend MAPEI's reach in the tile and floor-covering installation

markets, fulfilling our customers' needs for quicker and easier installations that do not compromise performance. Both of these products have been met with much success.

We've also grown through involvement in successful and diverse projects, including an impressive underground wine cave in Houston, the facade of the Fort Lauderdale Galleria, and an award-winning flooring installation at a Canadian Porsche dealership. These projects highlight the depth of knowledge and scope of possibility to be found with MAPEI products and personnel. From our Underground Technology Team (UTT) to our coatings and flooring installation products, no matter the challenge, MAPEI has a solution.

Socially, we've grown into two separate and distinct channels: MAPEI USA and MAPEI Canada. These separate channels are a reflection of our growth and our dedication to better address our customers' needs at the local level. By individualizing and localizing these social channels, MAPEI will now be better able to highlight the unique aspects of each country's market, including specific products, languages, events and such country-specific industry-related topics as regulations.

In 2018, our growth is on track to outpace the U.S. economy. And that is in large part because we work as a team. We may work on separate product portfolios, but we have one common goal – to grow MAPEI into North America's biggest manufacturer of chemical products for construction. And, as this issue shows, we will... one mall, one ship, one underground wine cavern, one floor, at a time.

Sincerely,

A stylized, handwritten signature in black ink, appearing to be 'Luigi Di Geso'.

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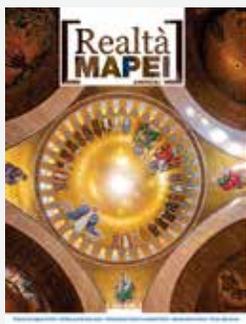
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MAPEI USA
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PEACHY PROJECTS

With Georgian hospitality, MAPEI provides solutions for Atlanta projects



Culture, architecture and urban design collide to produce a city on the cutting edge, which could well describe Atlanta. MAPEI's wide-ranging systems of products have been used to waterproof, level, strengthen and add elegant finishes to five fabulous new projects in Atlanta and the rural suburb of Canton.

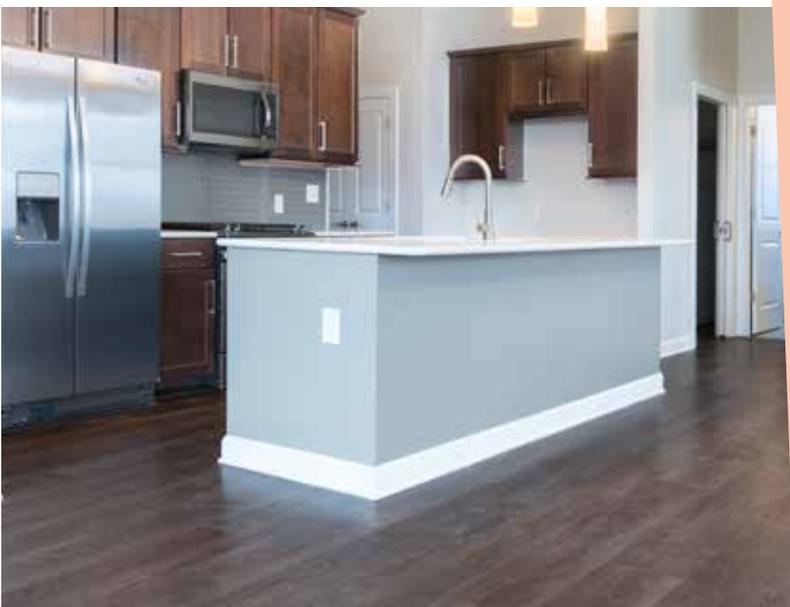
The Arbor at BridgeMill – Canton, GA, USA

Overview: The Arbor at BridgeMill is a luxurious senior living community newly constructed in Canton. The expansive campus offers several state-of-the-art residences totaling 28 private cottages, 130 resort-style apartments and on-site amenities including a theater, hair salon/barber shop, pool and spa, bistro café, restaurant, private dining lounges, fitness center and more. MAPEI's extensive selection of installation products helped to fast-track installations and remedied failures caused by moisture intrusion.

The Arbor at BridgeMill is a newly constructed senior living residential community in the heart of Canton, Atlanta. The overall concept of The Arbor is for residents to "age in place." As their care needs change, they can progress to alternative living options within the complex.

There are three levels of living at the Arbor: Independent living apartments or cottages, Assisted Living, and Total Care. Aspire Development Partners designed the community to accommodate retiring baby boomers, empty-nesters and previous homeowners who would like the assistance that senior facilities provide without losing the essence of independence. Each of the spacious cottages features an open-concept floor plan, resort-style living rooms and walk-in closets. The multi-entryway bathrooms feature "zero-entry" (barrier-free) walk-in showers to eliminate incidence of falls or slippage.

In the bathrooms, the team used **Mapelastic® AquaDefense** to waterproof shower pans along with **Mapelastic CI** for crack isolation on the floors. The same two products were utilized in pool areas. To set the sand-colored 13" x 13" (33 x 33 cm) Daltile Cove Creek tiles in the showers, **Ultraflex LHT®** was used, providing premium performance for a non-sag, nonslump installation. To grout the shower walls, Pro Floors installers used **Ultracolor® Plus FA** in the "Pewter" color for its efflorescence-free application. Throughout the living rooms and kitchens of the freestanding cottages, **Ultrabond ECO® 962** was used to set 3" x 36" (7.5 x 91 cm) Floorfolio luxury vinyl plank. In the kitchen, the glass tile backsplash was set with **Adesilex™ P10**. In the commercial kitchens, 8,000 sq. ft. (743 m²) of 8" x 8" (20 x 20 cm) quarry textured tiles from Daltile were set with **Ultraflex LHT** and grouted with **Kerapoxy® CQ**. In commercial areas, **Ultrabond ECO 711** and **Ultrabond ECO 575** adhesives were also used. Along the way, failures caused by moisture intrusion were solved by using **Planiseal® MSP**, a moisture-control membrane and self-leveling primer with fast-track technology. And differentials with foundation walls in pool areas were resolved with **Mapecem® Quickpatch**.



Mercedes-Benz USA Headquarters – Atlanta, GA, USA

Overview: MAPEI products for self-leveling, resilient flooring installation and grouting were used to help construct Mercedes-Benz USA, the new company headquarters in Atlanta. The three-story, 200,000-square-foot (18 581 m²) building will house marketing, sales, customer service, accounting and other functions.

Mercedes-Benz USA (MBUSA) has joined a lengthy list of Fortune 500 companies in the Atlanta area, including Delta Air Lines, Aflac, UPS and Home Depot. Founded in 1926, Mercedes-Benz has become a brand renowned for luxury, living up to its well-suited slogan, “The best or nothing.”

The site of the new USA headquarters projects a low profile, finding balance between the surrounding mid-rise office developments, the low urban scale residential neighborhood and Perimeter Mall. MBUSA’s subtle, windshield-like glass exterior is adorned with a massive replication of the unmistakable insignia stamped high above the entryway. Inspired by transparency, availability and sociability, MBUSA President and CEO Dietmar Exler explained that “the idea of the building is cooperation and working together.” The emphasis on creating communal work areas led the architectural firm Gensler to design exposed offices and collaborative workspaces in multifunctional rooms.

The three-story building comprises floor-to-ceiling windows, full glass facades, high ceilings, open-concept floor plans and balconies overlooking an expansive atrium. To begin work, installers used **Planipatch**[®] and **Ultraplan**[®] 1 Plus to flatten the substrate and level the floors. **Ultrabond ECO**[®] 810 was applied underneath modern gray, black and white striped 24" x 24" (61 x 61 cm) Migrate and Color Form carpet tiles from Shaw. The core of the building is the atrium, which doubles as a cafeteria and informal meeting area. In this area, and leading to the adjoining commercial kitchen, **Keracolor**[®] S in “Avalanche” color was used to grout white 6" x 36" (15 x 91 cm) Starker Porcelain tiles by Unicom. In several bathrooms, **Keracolor** S was also applied to marbled floors, walls, the mosaic tiles in showers and the backsplashes in break rooms. The lowest level of the building houses a state-of-the-art fitness center. **Ultrabond ECO** 575 was used to install 13,000 linear feet (3 962 m) of Johnsonite Rubber Wall Base in the gym, providing easy cleanability. The Mercedes-Benz USA headquarters officially opened in 2018.





Piedmont House – Atlanta, GA, USA

Overview: A full system of MAPEI products was used to construct an impressive, new high-rise tower in Midtown Atlanta. The Atlanta Midtown Alliance joined forces with Wood Partners to develop Piedmont House, formerly known as Alta at the Park. Located adjacent to Atlanta's Piedmont Park, the 22-story, 300,000-square-foot (27 871 m²) apartment development features 198 penthouse-inspired residences, 2,500 sq. ft. (232 m²) of retail space and a shared parking garage. The living area begins on the seventh floor, sitting atop a six-story parking garage.

The architectural design by Rule Joy Trammell + Rubio, LLC reflects elegance and beauty, down to the detail of including a baby grand piano and wine lounge. The complex also includes premium amenities on the seventh floor and a second amenity

space on the 22nd-floor rooftop with a spectacular view of Piedmont Park. Piedmont Park has a long and varied history, but its most historic moment was as host of the Cotton States and International Exposition in 1895. Since then, the park has become a destination for special events, festivals, concerts and much more.

It is no coincidence that the landscape of Piedmont Park evokes thoughts of New York's Central Park. The sons of famed landscape architect Frederick Law Olmsted designed the master plan for rejuvenating the park, as they have for Grant Park (Chicago, IL), Prospect Park (Brooklyn, NY), and the gardens of the United States Capitol and the White House.

MAPEI products were used to set all the tile and wood flooring, including double-stick applications of **Ultrabond ECO® 975** used to adhere a sound-control underlayment. In the urban-inspired lobby, **Ultraflex LHT®** was used to set contemporary 12" x 36" (30 x 91 cm) Borneo Blue tiles on the entry walls. This particular tile style will be unique to this high-rise because this tile style has subsequently been discontinued. The

floors and 15-foot-high (4.57 m) walls were also set with **Ultraflex LHT** and tiled with 24" x 24" (61 x 61 cm) Concrete Black Lappato, black and Lappato white tiles special-delivered by air from Spain.

Each apartment features a chef-inspired kitchen, engineered hardwood flooring (which extends to the living areas), Bosch stainless-steel appliances and quartz countertops. To amplify these elements, Strada Mist Veincut Marble polished mosaic tiles were set with **Ultraflex LHT** and grouted with **Ultracolor® Plus FA**. Bathroom floors and walls were tiled with 12" x 24" (30 x 61 cm) Interceramic Porcelain Pewter tiles.

A big draw to utilizing MAPEI products was the company's full system offerings of mortars, grouts, adhesives and self-levelers. "The floors were poured poorly, so we used MAPEI products to level them out," said contractor Sam Munsie. "I'm a big proponent of supplying all the materials on the job from one brand... This is why I look for full systems from MAPEI."

Hanover Buckhead Village – Atlanta, GA, USA

Overview: Hanover Buckhead Village is a premier, ultra luxurious high-rise apartment building in Atlanta's affluent Buckhead district. MAPEI's systems for surface preparation, installation of flooring/tile, and grouting were used throughout the modern collection of residences.

Adjacent to the historic Buckhead Theatre, this new residence is also within walking distance of top-tier restaurants and The Shops Buckhead Atlanta. The luxuriously curved tower was developed by the Houston-based Hanover Company and designed by architect Solomon Cordwell Buenz of Chicago.

The lobby's grand entrance features a traditional marbled staircase, and white and gray marbled walls and floors in the foyer. **Ultraflex LHT**® was used to set large 24" x 48" (61 x 122 cm) white and gray marbled Calacatta Thorntree tile on the walls, floors and grand staircase. To accomplish the marbled floor installation in the lobby, the crew prepared the subfloor with **Mapeguard**® **UM**. In the corridors leading to each unit, carpet tile was also installed using **Ultrabond ECO**® **185**, which was ideal for ultra fast grab and superb bond strength.

Each residential unit features a stunning panoramic view. To ensure that the view of the city remained the focal point of the open floor plan, monochromatic colors were used throughout each room. Along with the distressed wood-look tile, 12" x 24" (30 x 61 cm) EuroMarmo Calacatta porcelain tiles

were set with **Ultraflex LHT** and grouted with **Ultracolor**® **Plus FA** in "Frost" color on the bathroom walls, bathroom floors and kitchen backsplash. In lieu of natural lighting, modern track lighting was installed above the kitchen island and counters. Additionally, in a unique and unconventional move, the entire complex utilized **Ultraflex LHT** mortar to set the condo number markers outside of each room.

MAPEI installation products for floor coverings and tile were used throughout the common areas, the main entryway, elevators and the lobby, as well as the 20,000 sq. ft. (1 858 m²) area of the 6th floor pool deck and pool-side cabana. The newly built high-rise emanates elegance and is sure to deliver the sophistication that residents of Buckhead have come to expect.



Nine15 Midtown Apartments – Atlanta, GA, USA

Overview: In the heart of downtown Atlanta, various MAPEI products for surface preparation, tile/carpet installation and sealing were used in building this sophisticated apartment complex on Midtown's vibrant Peachtree Street.

At the epicenter of Atlanta's revitalization is the historic Peachtree Street. Many of Atlanta's most prominent buildings and landmarks are located here. Nine15 Midtown Apartments fits right into the walkable landscape of the mixed-use developments in downtown Atlanta. The design of Nine15 emphasizes green living with its energy-conserving stainless-steel appliances, clean lines, wood-style flooring

and polished aesthetics. Nine15 is also on track to becoming LEED-certified, due in part to the use of MAPEI products.

As part of the green living vision, Nine15 includes its own dog-friendly, 1/2-acre (0.2-hectare) private park with secluded grilling areas. Residents can enjoy a full view of the park from the comfort of their homes, or can view the Atlanta skyline from the outdoor skydeck. Further integrating the lush outdoors into the interior, elements of nature are strategically incorporated throughout the building. Limited use of interior walls allows kitchens to seamlessly merge into living rooms. Floor-to-ceiling windows, airy cloud-colored walls, wood-look tile and glass mosaic backsplashes transform the combined space into a breathable indoor-outdoor experience.

This project called for a wide variety of products. For surface preparation, MAPEI's

4-to-1™ **Mud Bed Mix** was used in the showers in conjunction with **Mapelastic**® **AquaDefense** to waterproof the tub surrounds and showers. **Ultraflex**™ **2** was used to set bathroom tiles from Shaw Floors' Elegance collection, resulting in a glossy and sleek finish that allows the modernized rainfall shower head and chrome accessories to be the focal points in the bathrooms. **Adesilex**™ **P10** glass-tile mortar was used to set the translucent Random Linear Mosaic tiles by Elysium in the kitchen and bathrooms. For the finishing touch, **UltraCare**™ **Grout Sealer** provided protection against common stains without altering the color of grout joints. **Ultrabond ECO**® **360** was used underneath carpet tile, from Mannington's Connected collection, which filled offices, common areas, closets and bedrooms. Nine15 Midtown is now open to residents.

2018 TRADE SHOWS

MAPEI displays and demonstrates innovation at industry trade shows



Coverings 2018

MAPEI enjoyed extreme popularity at its booths at Coverings 2018, held in May at the Georgia World Congress Center in Atlanta. It was a highly attended show with nearly 25,000 natural stone and ceramic tile industry professionals attending the week-long expo, which featured over 1,100 exhibitors from all over the world and more than 45 educational sessions.

Among products showcased were **Planitop® 330 Fast** moisture-resistant render and patch, **MAPEI Flexcolor™ 3D** translucent and ready-to-use grout, MAPEI's family of thixotropic mortars, and the new **Mapeguard® WP 200** sheet-applied waterproofing membrane. The MAPEI demo team – which included Sam Biondo, Gerald Sloan, Logan Reavis,



Scott Markham and Scott Benavent – kept booth visitors entertained and informed with multiple in-booth demos of the products. They also participated in installation demonstrations at the Tile Council of North America (TCNA) Demonstration Stage.

MAPEI continued its role as a provider of industry-leading information as well. Technical Services team members Cris Bierschank, Jim Whitfield and Dan Marvin presented educational sessions.

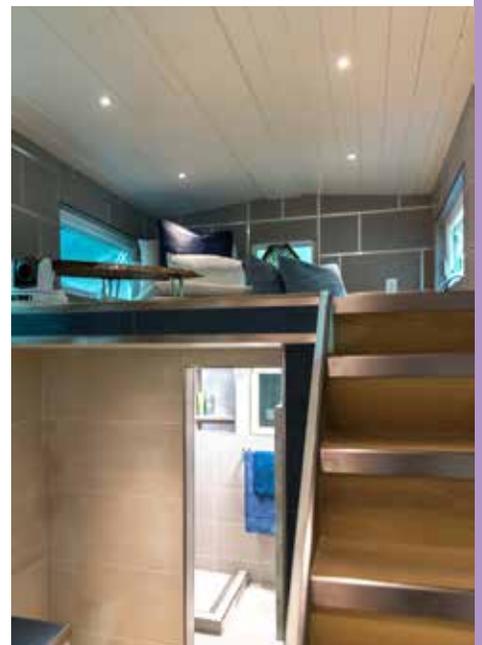
MAPEI also participated in the Installation Design Showcase's Tiny House Event. In order to showcase the increasing interest in this design and building trend, the Coverings expo worked with designers to create three

small, sustainable and luxurious homes, each measuring approximately 40 x 20 feet (12.2 x 6.10 m). MAPEI was among the sponsors donating materials, which were selected based on their performance and green aspects. MAPEI's products included **MAPEI Ultralite™ Mortar**, **Ultracolor® Plus FA**, **ECO Prim Grip™**, **Novoplan® 2 Plus**, **Mapelastic® AquaDefense**, **Mapesil™ T** and **Planitop 330 Fast**.

MAPEI also had the opportunity to support the "Clean The World" charity event. For more about how MAPEI gives back to the communities that host industry trade shows, see the Corporate Responsibility feature on Page 11 of this *Realtà MAPEI Americas* issue.



The Tiny House Event (and MAPEI products) demonstrated that luxury is attainable no matter the size of the home.



which allowed us to spend quality time with our clients.”

The event's theme was TWA. That's not surprising, as the venue features a historical representation of the airline – from model planes to vintage outfits worn by pilots and attendants. And MAPEI played off of this vintage setting to great effect. Guests were greeted by the original “flipping” arrivals/departures sign, which read “Welcome MAPEI” and listed the hours of the event. As a souvenir of the evening, each guest was presented with a View-Master-style viewer containing images of the TWA lounge. After the event, guests received a follow-up reel with images from the evening.



MAPEI North America's President and CEO, Luigi Di Geso, addresses guests at the TWA event.



HEALTHY HELP

MAPEI aids homeless vets through health-focused charity

During the Coverings 2018 Expo, MAPEI helped to support the charity Clean the World in its distribution of hygiene and toiletry products to homeless veterans, in an effort to prevent fatal diseases.

As described by Dan Marvin, MAPEI's Technical Services Director, MAPEI has always participated in a charity event at the Coverings trade show, "such as the construction of tiled doghouses to be donated to local shelters, or tiled benches to be given to local parks." For the 2018 trade show, Marvin said the charity effort was designed "to give back to the local Atlanta community in a meaningful way – specifically by packing hygiene kits for homeless veterans through Clean the World."

Clean the World is dedicated to saving lives around the world by leading a "global hygiene revolution." The organization collects unused soap, toothpaste, toothbrushes and similar products

from more than 5,000 hotels and resorts, distributing these items to children and the homeless who are at high risk of death due to poor hygiene. Since 2009, Clean the World has distributed more than 41 million bars of soap in 118 countries, noting that hand-washing significantly reduces the risk of diseases such as pneumonia and cholera. For the Coverings event, the target demographic to be helped was one of Atlanta's neediest – homeless veterans.

"Clean the World starts by collecting unused toiletries from hotels," Marvin explained. "Through support from MAPEI and contributions from Florida Tile, NTCA, and our industry's publishing groups, we were able to pack 800 kits in one afternoon and distribute them immediately to the veterans." He noted that MAPEI also provided T-shirts and logistical support for the charity effort.



ARCHITECTURAL SPECS

MAPEI makes specifications easy, with pre-written and customizable solutions



The MAPEI Architectural Program was implemented in 2010 under the guidance of Luigi Di Geso, President and CEO of MAPEI North America. The program focuses on building strong relationships with architects, designers and engineers – the professionals who specify the use of our products.

We began with representatives in New York City, Chicago, Texas and Southern California, following a three-step approach that we follow to this day. Step One is to establish national accounts, which we did, including Chick-fil-A, Marriott, McDonald's and Victoria's Secret. Step Two is to build relationships with major metropolitan architectural firms. We accomplished this through a variety of methods, such as one-on-one meetings, lunch-and-learns and attending conferences. Whenever possible, we introduced the architects, engineers and designers to MAPEI's Website and our architectural specification writing tool (more on that later). Step Three is to track projects from specification to application. The third step allows us to continue growing our successful portfolio of project references – which we then use in Steps One and Two.

This three-step process also has been successful in helping us to grow our team. We now have added representatives in Ohio, New England, New York, the Mid-Atlantic, the Southeast (including Florida), the Midwest, Colorado, Texas, Hawaii, Northern California and the Pacific Northwest.

Growing through technology

In addition to working with contractors and distributors, the focus of our architectural and design (A&D) group is to provide assistance for installation solutions. This is accomplished, in part, by providing the architect and designer with technical knowledge on industry standards and practices.

We provide this information in a number of ways. Foremost is giving presentations that qualify as continuing education units (CEUs) approved by the American Institute of Architects (AIA). These presentations focus on the various types of products we offer, how they are used and their performance as total installation systems. We give these presentations at scheduled lunch-and-learns, in classes and even at conferences.

Our Website at www.mapei.com features a portal designed for architects, engineers and designers. Users can access portal information in two ways: The "Customer Tools" dropdown menu at the top of our homepage contains the link for the "Tools for Architects" portal. Or, one can click on the homepage button marked "Architectural Solutions" to access the "Tools for Architects" portal.



Another source for specifications is the portal's Architectural CAD/Spec Guide, which gives users access to CADs and accompanying CSI-format specifications for specific tile/stone, floor-covering and below-grade waterproofing installations. Updated regularly to keep up with changes in products and industry standards, these CAD/specs can be downloaded in a number of formats.



Visitors to the architectural portal will also find Spec Maestro, MAPEI's interactive specification writing tool. This allows architects and designers to customize their own CSI-format three-part specification to directly relate to their specific jobsite conditions.

As we inform the specification writers we visit, MAPEI is not just a company that produces tile mortars and grouts. Our product offering is wide and varied, including the categories Concrete Restoration Systems, Floor Covering Installation Systems, Products for Sports Flooring, Tile & Stone Installation Systems, Waterproofing Systems, Products for Wood Flooring, Admixtures for Concrete, Products for Structural Strengthening, Products for Underground Construction, Cement Additives, (U.S. only) Products for the Marine Industry and (Canada only) Cementitious and Resin Flooring Systems. These product lines are well represented with our pre-written specifications and customizable specification writing tool.

Every year, MAPEI reinvests 5% of its revenue into R&D. This means that we are constantly working to create the latest innovations for the construction industry. Consequently, our specification writing capabilities will only become more powerful. Our architectural program is truly growing through technology.



About the author:
Mike Granatowski

Mike is the Director of Architectural and Commercial Projects for MAPEI. Mike is a graduate of the University of Arizona, where he studied architecture and graduated with a degree in business administration. Mike has worked in the flooring industry for more than 40 years and has specialized in tile and stone installation systems, where he has been involved with installation, distribution and sales, focusing on design professionals.



The "Tools for Architects" portal contains links to our brochures for architectural building, hospitality systems and healthcare systems – all of which focus on installation solutions for these commonly specified areas. The portal also includes links to project references (such as the Ft. Lauderdale airport and Dallas Cowboys stadium) as well as three-part, master specifications for MAPEI concrete restoration as well as floor-covering, tile/stone and waterproofing installation systems.



GLASS CEILING

National Shrine's
dome wears new
glass tile, thanks to
MAPEI mortar

Trinity Dome, in the Basilica of the National Shrine of the Immaculate Conception – Washington, D.C., USA

Overview: MAPEI's *Kerabond/Keralastic System* was used to install 14 million pieces of specialized Venetian glass tile across 18,300 square feet (1 700 m²) of the Trinity Dome within the Basilica of the National Shrine of the Immaculate Conception.

The Basilica of the National Shrine of the Immaculate Conception in Washington, D.C., is the largest Roman Catholic church in the United States and the second largest church in North America. As one of the 10 largest churches in the world, the Basilica features over 80 chapels/oratories as well as extravagant domes with detailed mosaics in the Romanesque-Byzantine architectural style. As the national Catholic Church of the United States, the shrine has experienced several papal visits including Pope John Paul II, Pope Benedict XVI and, most recently, Pope Francis in 2015. During his first visit to the United States, Pope Francis visited the Basilica of the National Shrine of the Immaculate Conception to canonize 18th-century Spanish Franciscan missionary Saint Junípero Serra, who founded 21 missions in California. The canonization of this "Californian" saint at the church was heavily covered in the media, including the New York Times, the front cover of Newsweek, USA Today and C-SPAN.

The "crowning jewel" of the shrine is the Trinity Dome. It depicts the Christian trinity, the Virgin Mary and a procession of saints who have an association with the United States and the National Shrine. In celebration of the basilica's 100th anniversary, MAPEI provided products to complete the delicate installation of more than 18,300 square feet (1 700 m²) of Venetian glass tile.

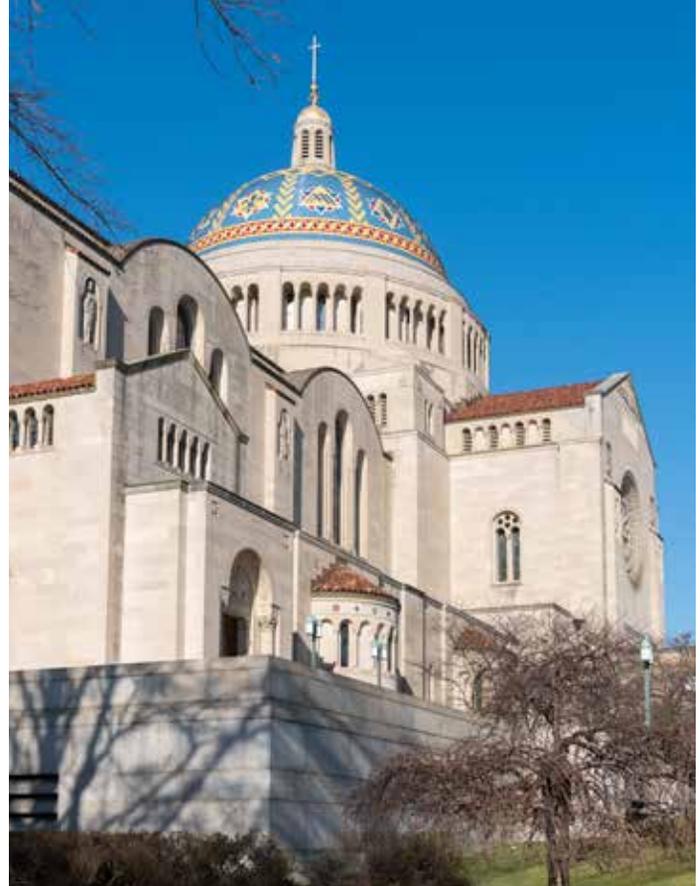
MAPEI products on the jobsite

The Trinity Dome is one of the most visually striking and physically extraordinary mosaics in the world, echoing those from the ancient world. The installation process – which featured MAPEI products – also employed age-old techniques, turning the installers into high-climbing artisans.

Having previously installed mosaics on three smaller domes within the basilica, when the crew from Rugo Stone won the bid for the tile installation of the mosaic in the main dome, they immediately began working with the archdiocese, the architects and MAPEI on a plan to install the soaring artwork in the most unobtrusive manner possible.

Being a sacred place of worship, as well as the National Basilica, the church had to remain open during the installation. Further, nothing could fall from the jobsite. At that height, even the smallest tile could be deadly if dropped. So, an elaborate safety system was devised. The mosaic fabrication and installation processes were completed using a unique scaffolding system anchored into the structure of the basilica itself. The deck/base of the enclosed compartment was six floors above the central aisle (known as the nave) and featured eight floors of scaffolding rising above the deck in the enclosed compartment to the dome's apex, where the oculus marks 159 feet (48.5 m) above the nave. The worksite also included an air exchanger and ceiling cover to hide the installation crew from the worshippers below and to avoid interruption of regularly scheduled services.

All of the work was completed using MAPEI's ANSI A118.15E-compliant *Kerabond/Keralastic System*. An installation of this kind required a tile mortar with a high-performance bond. This two-part system provided exceptional bond strength, flexibility and





elongation. A flexible yet strong mortar was imperative, as failure was not an option. The specified mosaic embellishment consisted of 14 million pieces of specialized Venetian glass, totaling 24 short tons (21.8 metric tons) of tile across 18,300 square feet (1 700 m²) of the dome.

First, the Rugo Stone team completely removed all of the old plaster. Then, working in a manner reminiscent of their artistic forebearers in Ravenna, they hand-set the handmade Venetian glass tiles throughout the 18,300-square-foot (1 700 m²) project. Given the delicate nature of the tiles – and of the setting – through their work, the Rugo crew returned to the classic past.

To complete the complex design of gold and glass tile, installers laid on their backs to individually place each tiny tile. Only a handful of contractors in the United States are capable of completing such a project – especially given the fact that the Trinity Dome project is one of the largest mosaics of its kind in the world – and the tile had to be hand-set. But the crew from Rugo Stone knew the enormity of the task. They had previously completed mosaics in three other smaller domes on the property. And now, thanks to these craftsmen in conjunction with MAPEI, the basilica's dome is a golden, glittering heaven in celebration of the National Shrine's 100th anniversary.

TECHNICAL DATA

The Basilica of the National Shrine of the Immaculate

Conception – Washington, D.C., USA

Period of construction: 2015

Period of intervention: 2017

Where MAPEI products were used: MAPEI's *Kerabond/Keralastic* System was used to install Venetian glass tile on the ceiling of the basilica's Trinity Dome.

Project owner: Roman Catholic Archdiocese of Washington

Architect: Charles Donagh Maginnis

Installer: Rugo Stone LLC

MAPEI distributor: Morris Tile

MAPEI coordinators: Gary Waldron, Allen Janofsky, Vince Linton

MAPEI Products

Setting tiles: *Kerabond/Keralastic*™ System

HIGH PERFORMERS

When to use high-performance mortars (and what they are)

As tiles get larger and installations get trickier, all setting materials manufacturers have developed a category of “high-performance” mortars. If tile is being set in a freeze/thaw environment, on above-grade areas with deflection, in submerged applications, or with really large tiles, chances are good that the installers are being directed to one of the higher-performing mortars. What are these mortars really, and what is the difference between them?





Five things to know:

How is high performance measured?

Mortars have to do one thing very well – stick tile to the substrate. The amount and type of cement used helps to do this by interlocking mechanically with pores on the back of the tile and in the substrate (more cement = higher mechanical performance). The polymer additives do this by adhering chemically and allowing the cement particles to flex (more polymer = higher chemical performance). Standards from entities such as American National Standards Institute (ANSI) and International Organization of Standardization (ISO) use different approaches to determine the bond strength, but both do so for conditions such as high temperatures, freeze/thaw conditions and submergence.

Where should they be used?

The best resource for tile installers is the TCNA Handbook for Ceramic, Glass, and Stone Tile Installation. Published by the Tile Council of North America, the handbook contains drawings that show how to address more than 250 situations – such as floors over concrete, pools and exterior installations. Each method includes a section on “materials” that indicates the minimum performance requirement of the mortar for that task. Both ANSI and ISO requirements are included.

How does ISO designate high performance?

ISO standards provide letters/numbers for different mortars to designate how they are used. Cement-based mortars (a powder mortar to which water or a liquid additive is added and blended) receive a C classification, with standard-performing mortars qualifying as C1. Higher-performance mortars are designated with a C2 rating, which means that the bond developed is stronger under the conditions tested. For ISO, there is an additional concept of “deformability” (how much the mortar can bend before it breaks), with S1 and S2 identifying two levels of performance. High-performance ISO mortars have both designations. For example, **MAPEI Ultralite™ S2** is both a C2 and an S2. Other letters designating other properties – including extended open time (E), fast-setting (F), plywood (P) and thixotropic (T) – can also be added if the mortar passes specific testing criteria.



MAPEI's ANSI A118.15 tile and stone mortars



4 How does ANSI designate high performance?

ANSI takes a different approach. Each class of cement mortars gets its own standard. A118.1 (unmodified) and A118.4 (modified) standards have been around for years. The “improved” modified mortars fall under the relatively new A118.15 standard. As with ISO, A118.15 tests mortars under a variety of conditions (freeze/thaw, submerged, hot conditions). If the mortar does not pass the minimum requirements, it is not an A118.15 mortar. Other ANSI letters for extended open time, fast-setting and thixotropic mortars can be added.

How do I know if it's “fake news”?

By referring to the TCNA Handbook methods to determine the appropriate mortars, installers and specifiers can be comfortable that the correct mortar is being used. Unfortunately, many manufacturers misidentify their mortars as A118.15 mortars when they don't pass all of the tests. That can lead to the wrong mortar being used for a critical application, which can in turn lead to bond failure. The tests aren't easy. It's much easier to reference the few ANSI tests that a mortar did pass rather than improving the product to make it fully compliant. MAPEI has chosen not to go this route. MAPEI only states A118.15 compliance on its products that actually comply – **Ultraflex™ 3, Ultraflex RS, Ultraflex LFT, Ultraflex LFT Rapid, Kerabond® T / Keralastic®, Kerabond/ Keralastic™, MAPEI Ultralite S2, MAPEI Ultralite Mortar, MAPEI Ultralite S1 Quick** and **Granirapid™**. This is the largest lineup of true A118.15 mortars available in the industry.

As with certifications of any type, with high-performance mortars, it is always best to trust while verifying. If there is any question, ask the manufacturer for all of the test results. If the results can't be provided, the mortar is probably not fully compliant.



About the author:
Dan Marvin

Dan is the Director of Technical Services for MAPEI North America. Dan has more than 20 years of technical expertise in the tile industry and sits on technical committees for TCNA, CTDA, ASTM, ANSI, and the Handbook for Tile and Stone Installation. He works closely with these committees to improve existing standards and create new ones as the industry continues to evolve.

CONCRETE SOLUTIONS

American Concrete Institute fills the information cracks for floor-covering installers

Within our business segment related to floor-covering products and installation, several well-known associations offer a wealth of resources and information on specific flooring topics. For example, the Resilient Floor Covering Institute (RFCI) covers all things relative to resilient flooring and was the main source of information when asbestos was a hot topic. The Carpet and Rug Institute (CRI) is the primary source for resources and standards for the textile and carpet industry. The National Wood Flooring Association (NWFA) stands ready to train, inform and lobby for all things related to wood flooring. I would also be remiss if I did not mention the Ceramic Tile Distributors Association (CTDA), the National Tile Contractors Association (NTCA) and the Ceramic Tile Education Foundation (CTEF); combined, these three associations cover all aspects of ceramic and stone tile. The list of associations also includes the Flooring Contractors Association (FCICA), which deals with the business of floor-covering installation.

Looking at the list of industry associations and resources, you see that practically all the aspects of flooring are covered. But there is a glaring omission: An association dedicated to providing resources for concrete, one of the most commonly bonded-to substrates in this industry. That association is the American Concrete Institute (ACI).

Founded in 1904 and headquartered in Farmington Hills, Michigan, the ACI is a leading global authority and resource for those involved in concrete design, construction and materials. The association develops and distributes consensus-based standards, technical resources, educational and training programs, certification programs and proven



American Concrete Institute
Always advancing

MAPEI provides a variety of solutions for flooring-covering concrete installations:

Patching and skimcoating

Mapecem® Quickpatch
Planiprep™ MRS

Moisture control

Planiseal® MSP
Planiseal PMB

Self-leveling

Ultraplan® 1 Plus
Ultraplan LSC



expertise to those who share a commitment to pursuing the best use of concrete. With about 20,000 members from more than 120 countries, the ACI's single-minded focus on concrete has given rise to hundreds of documents relating to concrete design and use.

One of those documents is extremely relative and important to the flooring industry – 302.2R-06: Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials. The following description of the document describes its scope:



“This guide contains materials, design, and construction recommendations for concrete slabs-on-ground and suspended slabs that are to receive moisture-sensitive flooring materials. These flooring materials include sheet rubber, epoxy coatings, vinyl composition tile, sheet vinyl, carpet, athletic flooring, laminates, and hardwood. Chapters 1 through 8 provide an understanding of concrete moisture behavior and drying, and show how recommended construction practices can

contribute to successful performance of floor covering materials. This background provides a basis for the recommendations in Chapter 9 to improve performance of floor covering materials in contact with concrete moisture and alkalinity. Because this guide is specific to floor moisture problems and solutions, refer to the most current editions of both ACI 302.1R, ‘Guide for Concrete Floor and Slab Construction,’ and ACI 360R, ‘Design of Slabs-on-Ground,’

for general information. These two documents contain guidance on floor design and construction that is needed to achieve successful floor covering performance.”

I have heard numerous disparaging comments from individuals in flooring-related industries along the lines of, “Those concrete people never think about floor covering.” But nothing could be further from the truth. The ACI obviously understands the needs and expectations of the flooring industry and has the resources, education and support to help ensure that floor coverings are installed properly and withstand the rigors they have been designed to withstand.

It is highly recommended that you get to know the ACI a little better, and its Website at www.concrete.org is a good place to start.



About the author:

Jeffrey B. Johnson

Jeff is the Business Manager for MAPEI's Floor Covering Installation Systems line. Jeff brings to the industry more than 25 years' experience in the development and marketing of floor-covering installation products. Practical experience in the construction industry and as a bench chemist gives Jeff an insightful perspective on surface preparation, moisture mitigation and floor-covering installation.

IN TER IOR

HOTEL COFFEE SHOP

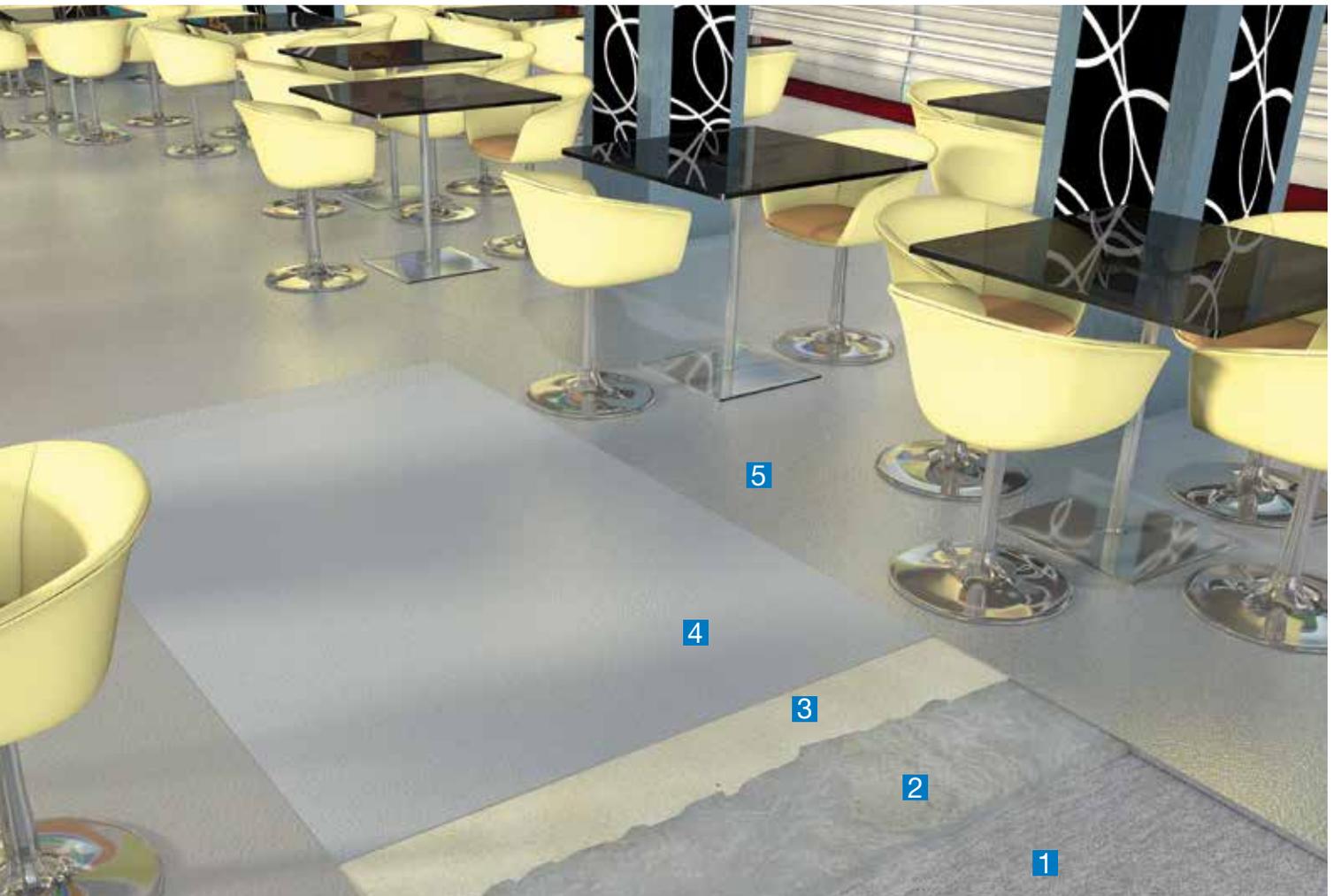
DECORATIVE
TOPPING

Concrete flooring is a trendy choice, but not all existing substrates are up to the task of being attractive and durable. Enter *Ultratop*, MAPEI's fast-track solution for creating a beautiful floor. Natural gray *Ultratop* is also available in white, which allows the floor to be your canvas for a variety of coloring options. Plus, there is a version that can be polished.

Issues: Need for an aesthetic and functional upgrade of existing substrates, especially in high-traffic areas

Solution: *Ultratop* is specifically designed to create attractive floors that offer more than 6,000 psi (41.4 MPa) of compressive strength when fully cured.

- 1 Concrete
- 2 *Planibond*® EBA
- 3 Sand broadcast
- 4 *Ultratop*®
- 5 *Mapecrete*™ Protector FF



Mapeguard® WP 200

Waterproofing Sheet Membrane for Ceramic Tile and Stone

As a quick and easy way to waterproof in wet areas, *Mapeguard WP 200* thin, flexible waterproofing polyethylene sheet membrane features a nonwoven, bonding polypropylene fabric on both sides. *Mapeguard WP 200* can be used for waterproofing, vapor control and crack isolation under ceramic, porcelain, and natural stone tiles. The laminated fabric webbing is designed to anchor the membrane to the substrate and tiles to the membrane using the bonded thin-set method with recommended, polymer-modified mortars. *Mapeguard WP 200*'s low perm rating performance is ideal for vapor protection in showers, steam rooms and wet areas.

Features and Benefits

- Waterproofing and vapor control membrane
- High-performance crack isolation up to 1/8" (3 mm)
- Recommended for use with polymer-modified mortars
- For residential and commercial interior/exterior use
- Approved for use in residential and commercial steam rooms
- Polyethylene layer with a laminated, nonwoven, polypropylene fabric on both sides
- Low perm rating per ASTM E96, Method E
- Uniformed thickness with a thin profile
- Lightweight for easy handling and fast installation
- Allows immediate tiling after installation
- ICC Evaluation Service Report ESR 3474 and IAPMO File 3996

Uses

- Interior/exterior residential (homes, apartments and condominiums) and commercial (office buildings, restaurants, galleries and malls) floors and walls
- Tubs, showers, bathrooms, kitchens, laundry rooms, food courts, lobbies, foyers and wet areas
- For steam rooms in residential and commercial environments

See full product details at www.mapei.com.



Product Performance Properties

Laboratory Tests	Results
ASTM C627 Service Rating (Robinson)	
16" (41 cm) o.c., wood substrate	Heavy
Concrete slab	Extra heavy

Shelf Life and Product Characteristics

Shelf life	2 years when stored in original, unopened packaging at 73°F (23°C) and 50% RH
Physical state	Polyethylene sheet membrane with nonwoven polypropylene fabric on both sides
Thickness	0.02" (0.44 to 0.48 mm), nominally 40 to 50 mils
Color	Blue
Storage and performance temperature range	-4°F to 122°F (-20°C to 50°C)

ANSI Specifications

Property	Test Results
System performance – ANSI A118.10	Pass
Fungus and microorganism resistance – ANSI A118.10	No mold growth
Seam strength – ANSI A118.10 and ASTM D751	23 lbs./in. (0.02 kgf/mm ²)
Breaking strength – ANSI A118.10 and ASTM D751	
Transverse	1,365.6 psi (9.42 MPa)
Longitudinal	2,003.2 psi (13.8 MPa)
Dimensional stability – ANSI A118.10 and ASTM D1240	< 0.7%
Waterproofness – ANSI A118.10 and ASTM D4068	Pass
Shear strength to ceramic tile and cement mortar – ANSI A118.10 and ASTM C482	> 50 psi (0.34 MPa)
Water vapor transmission – ASTM E96 (Method E)	0,22 (grains/h-ft ²)
Permeance – ASTM E96 (Method E)	0,12 perms
Shear strength – ASTM C482	
7 days, dry	136.6 psi (0.94 MPa)
7 days, water immersion	120.4 psi (0.83 MPa)
4 weeks	112.8 psi (0.78 MPa)
12 weeks	132.5 psi (0.91 MPa)
100 days, water immersion	142.4 psi (0.98 MPa)
Crack isolation – ANSI A118.12	High performance > 1/8" (3 mm)

Packaging and Coverage

Size	Coverage
Roll: 39.4" x 16.4' (1 m x 5 m)	53.8 sq. ft. (5 m ²)
Roll: 39.4" x 32.8' (1 m x 10 m)	108 sq. ft. (10 m ²)
Roll: 39.4" x 98.4' (1 m x 30 m)	323 sq. ft. (30 m ²)
Roll: 6' x 50' (1.83 m x 15.2 m)	300 sq. ft. (27.9 m ²)

MAPEI's TALL TALES

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

– MAPEI founder Rodolfo Squinzi



Here is another tale from a book of short stories about historically significant projects 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 walls of the Guggenheim Museum in New York. In this issue of *Realtà MAPEI*, we take a look at MAPEI's role in the Vatican's library.

Gallery of the Vatican Apostolic Library, Vatican City

The Vatican Musketeers (the famed floors speak)

It was a day like any other. Some 15,000 persons tread on us. The same routine, day in, day out. But it's never boring. We know by the sound whether the footfalls are those of men, women, the young, the elderly.

Some of us are so adept, we can even tell you their nationality: "She's Japanese. That's easy, part of a group." "Now, this one's from the U.S., a Native American by the soft tread." Real pros, no argument there.

Our best friends are the clavigers, from the Latin for "keepers of the keys." When they open the doors in the morning and close them at night, they stop to chat a while. Their sound is unmistakable: It's a metal-flourishing clinkity-clank. They let us in on the latest curiosities, gossip, and even palace leaks. We all know the Vatican as a magnificent, but also a bit mysterious, place. One curious tidbit we've learned is that it takes 2,797 keys to open and close its doors! Forgive us, St. Peter, but you're an amateur by comparison...

Oh! Let us introduce ourselves. We're the floors of the corridors you walk down to the Vatican Library. Confidentially, we call it the VAL. The path we lay takes you to the entrance of an extraordinary collection, the "Books of the Popes," arrayed over 1,700 square meters of floor space. The atmosphere? The artistic and religious apogee of the 1500s. Those were the days!

Now, the linoleum that covered us was laid down in the 1950s. The beating it had taken over the years since was, quite frankly, rather unbecoming of such a place to say the least. Steps had to be taken. Quick, sure-footed, efficient. That's how we became friends with MAPEI's products – **Mapecem**, **Granirapid**, **Ultracolor**, **Mapeflex PU21**. A fearsome foursome. Confidentially, of course, we call them the Musketeers. We once heard them arguing about who was to be D'Artagnan. Then a Swiss Guard appeared, and they fell silent. They didn't want anyone to hear them. Not another word. But we can say that the job MAPEI's products did with a bit of help from the master tile layers was nothing short of fantastic. It took a mere 40 days.

"Too quick," someone said. "What's all the rush," piped up another. The chorus grew. It was the furniture. The pieces have been there for 500 years. They're not used to change, sudden or otherwise.

What a sight it was when they opened the doors to the public again. Satisfaction all round. Thousands looked down as they walked through the corridors, ignoring the elegant coffered ceiling. We, the new flooring, were the star attraction. The frescoes, you ask? They complained a bit but then took it in stride.



Ultrabond ECO® 811

Universal Carpet Tile Adhesive

Ultrabond ECO 811 provides an enhanced, aggressive tack for installing all types of carpet tile. Applied with a trowel or roller depending on the installation, Ultrabond ECO 811 provides a secure, releasable adhesive base for standard PVC-backed carpet tile as well as for non-PVC-, bituminous-, felt- and polyolefin-backed carpet tile. Its mint-green color results in an easier-to-see application. This ready-to-use adhesive also works well with fiberglass-reinforced vinyl sheet flooring.

Features and Benefits

- Unique formulation provides aggressive tack for all carpet tile types
- Permanent or releasable installation system applications

Uses

- Installation of carpet tile and carpet underlayment used in releasable double glue-down carpet applications (underlayment-to-floor only)
- Installation of fiberglass-reinforced vinyl sheet flooring
- Interior residential
- Interior commercial
- Interior institutional

See full product details at www.mapei.com.



Product Performance Properties

Laboratory Tests	Results
Polymer type	Acrylic polymer
Solids content	40% to 60%
VOCs (Rule #1168 of California's SCAQMD)	< 40 g per L
VOCs (Section 01350 of California's CDPH)	Passed
pH	6 to 9
Density	8.3 lbs. per U.S. gal. (1.0 g per mL)
Color	Green
Shelf life	2 years when stored in original, unopened packaging at 73°F (23°C)
Storage conditions	40°F to 100°F (4°C to 38°C)
Flash point (ASTM D56)	> 212°F (100°C)
Protect from traffic	24 hours for light traffic, 72 hours for heavy traffic

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.

Packaging

Size
Pail: 1 U.S. gal. (3.79 L)
Pail: 4 U.S. gals. (15.1 L)
Pail: 5 U.S. gals. (18.9 L), Canada only

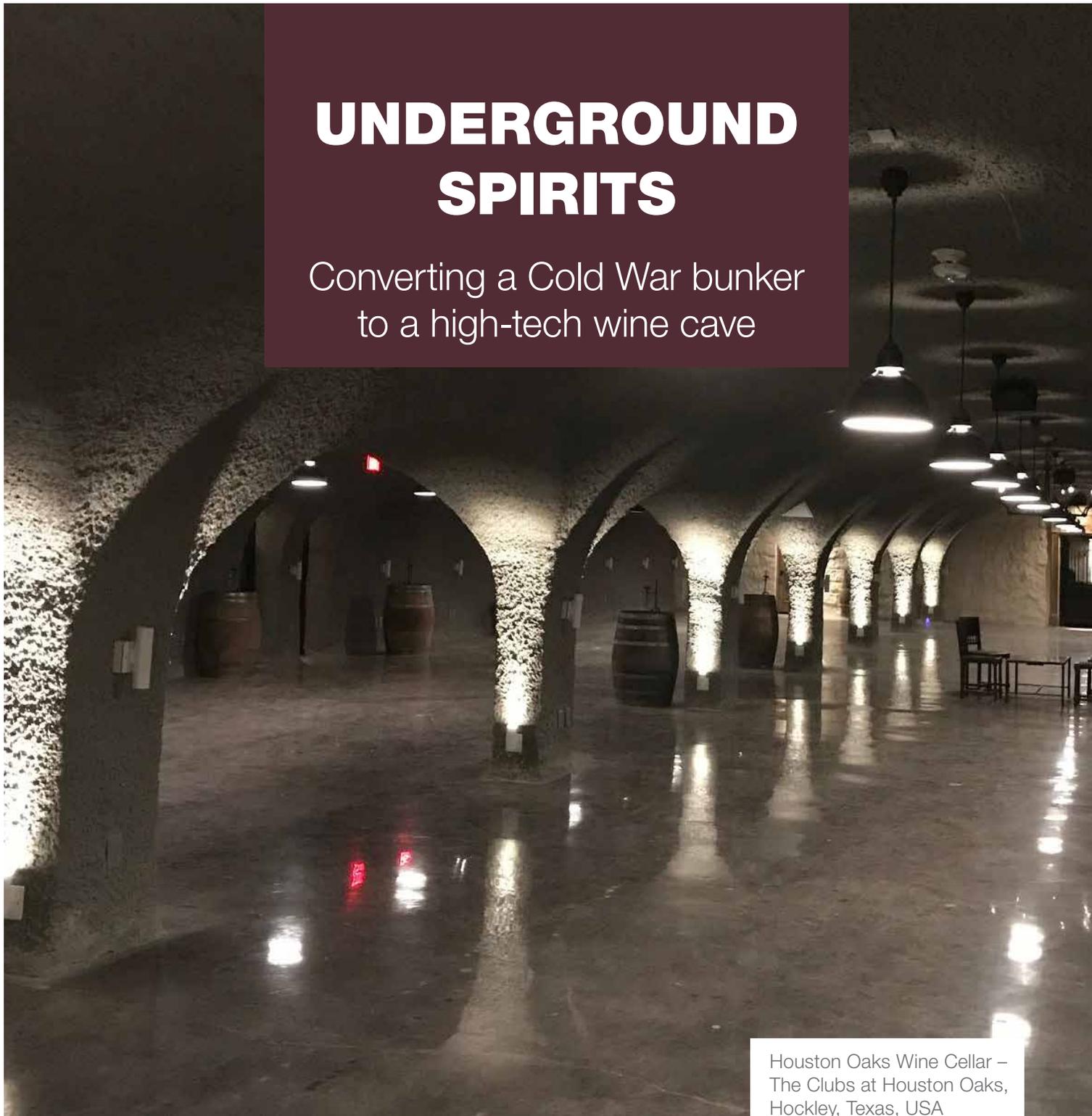
Approximate Coverage

Flooring Type	Typical Trowel	Coverage		
		Per 1 U.S. gal. (3.79 L)	Per 4 U.S. gals. (15.1 L)	Per 5 U.S. gals. (18.9 L)
Smooth-backed flooring products	1/32" x 1/16" x 1/32" (1 x 1.5 x 1 mm), U-notch	185 to 245 sq. ft. (17.2 to 22.8 m ²)	740 to 980 sq. ft. (68.7 to 91.0 m ²)	925 to 1,225 sq. ft. (85.9 to 114 m ²)
Rough-backed flooring products and carpet underlayment to substrate	1/16" x 1/16" x 1/16" (1.5 x 1.5 x 1.5 mm), square-notch	125 to 185 sq. ft. (11.6 to 17.2 m ²)	500 to 740 sq. ft. (46.5 to 68.7 m ²)	625 to 925 sq. ft. (58.1 to 85.9 m ²)



UNDERGROUND SPIRITS

Converting a Cold War bunker to a high-tech wine cave



Houston Oaks Wine Cellar –
The Clubs at Houston Oaks,
Hockley, Texas, USA

Overview: MAPEI's alkali-free, liquid set accelerator for shotcrete was used to speed and strengthen the concrete application that turned a 1950s-era bunker into a luxurious, high-tech wine cavern.

In the world of natural gas, Tenneco has a long history. Around World War II, the company – then known as Tenneco Oil and Gas Co. – controlled the pipelines that deliver oil and gas along the Eastern Seaboard of the United States. By the 1950s, a series of acquisitions transformed Tenneco into an international force. With

the advent of the Cold War, Tenneco was concerned about security and wanted a location for its company headquarters that could be easily controlled.

In 1956, Tenneco constructed a single facility from which the company could safely control its global gas lines. The site chosen for their new headquarters was in Hockley, Texas – a suburb 40 miles northwest of the facility's previous location in Houston. At that site, Tenneco also constructed the Tennwood Golf Club, which served as a nearly 1,000-acre (405-hectare) resort for employees and their families.



After the Cuban Missile Crisis in 1962, the Cold War became an international concern. In an effort to protect its global headquarters and employees from a nuclear blast, Tenneco built a 12,900-square-foot (1 198-m²) underground nuclear bunker facility with concrete walls measuring 3 feet (0.91 m) in thickness.

The end of the Cold War and the rise of technology brought many changes to the oil and gas industry. A series of mergers resulted in the oil and gas giant becoming a major auto parts company that is now headquartered in Lake Forest, Illinois. The company's former global headquarters in Hockley is now The Clubs at Houston Oaks – one of the most exclusive family resorts in an area known for exclusive resorts.

Sitting on the 1,000-acre (405-hectare) footprint of the Tenneco property, Houston Oaks features luxury homes and lodging, tennis courts, an equestrian center, a shooting range, a clubhouse, a chapel and a soon-to-be championship golf course that is currently under construction on the existing course. Even the underground bunker remains, but it has been transformed into a state-of-the-art, Napa Valley-style wine cellar known as Bunker 55°.

The wine cellar serves as a complement to the resort's working farm and ranch, a greenhouse (which features an aquaponics farm) and a farm-to-table restaurant. The cellar is always kept at 55°F (13°C) with an ideal humidity of 70 percent. In the cellar, Houston Oaks' wine club members have the option of reserving storage bunks that have space for 450 to 5,000 bottles of wine each. This massive wine cave also features a private dining room, a bar and event meeting spaces. One echo of Cold War spy drama remains amid all of this luxury: Entry to the cave requires a retina scan.

MAPEI products on the job

Byer Builders, Inc. was charged with sourcing a team of professionals, plus the most suitable products, to transform Tenneco's Bunker 55 into Houston Oaks' high-tech Bunker 55°. At five days from start to finish, the project's time frame was tight. With no time to waste, Byer Builders reached out to Bill Allen, Business Development Manager for Tunneling for MAPEI's Underground Technology Team (UTT), to assist with the shotcrete chemistry and ensure that the project was completed to the highest standards. Allen was asked to perform quality control at the concrete truck to ensure that the proper concrete slump was maintained during shotcrete production; he also worked as a nozzleman during the installation. As an American Concrete Institute examiner for nozzleman certification, "I enjoyed having the opportunity to handle the nozzle on this job," Allen said.

For his part, Byer Builders' Dave Johnson was glad to have Allen's experience on his jobsite. "I am excited to work with MAPEI UTT, and welcome the products and support they bring to our industry," Johnson said. Allen observed, "It was apparent from the moment I arrived, all the attention to detail Byer gave to the installation and preparation of the embedded mechanical fixtures and steel lath that formed the cavern's interior arches. Quality shotcrete is important, but the preparation is also as important."

The shotcrete installation was hand-sprayed using MAPEI's UTT product **Mapequick AFK 888**, an alkali-free, liquid set accelerator for shotcrete. "Utilizing *Mapequick AFK 888* allows shotcrete to be sprayed in one pass, about 6" to 8" [15 to 20 cm] thick on the arches and overhead," Allen said. "This is amazing because you are basically hanging concrete upside down without a form and defying gravity." Concrete mixed with *Mapequick AFK 888*



How *Mapequick AFK 888* saved the cave

The transformation of Tenneco's Bunker 55 into Houston Oaks' high-tech wine cellar required applying shotcrete to the walls and ceiling of the cellar. Given that the installation had such a tight time frame, the contractor knew that the shotcrete had to rapidly set and cure, and that they could count on MAPEI's technology to make this happen. *Mapequick AFK 888*, an alkali-free, inorganic salt-based liquid accelerator that is often used in tunneling projects, was added to the shotcrete to accelerate the curing process. In basic terms, *Mapequick AFK 888* contains ingredients that activate the silicates contained in the concrete, causing a rapid curing reaction.

The fact that *Mapequick AFK 888* is alkali-free means that the chance for alkali-based corrosion is reduced. Alkali is one of the most harmful substances in concrete – causing swelling, spalling, cracking and even premature structural failure.

Another bonus of using *Mapequick AFK 888* is found in the improved bonding characteristics that the concrete gains from the additive. Shotcrete bonds better to rocky and/or uneven surfaces when it is used in conjunction with *Mapequick AFK 888*, resulting in less concrete rebound and cost. In addition, shotcrete mixed with *Mapequick AFK 888* is 95% more compact than a sample of surface-compacted reference concrete without an accelerating agent. Moreover, on a project with a tight schedule, ease of application and finishing is crucial because time is money.



adheres better to surfaces and has higher mechanical strength than concrete without the accelerator. This means no slumping or sagging of unrestrained concrete with high-early strength performance that satisfies tight construction schedules.

"The *AFK 888* accelerator produces shotcrete that is characterized by rapid-setting times, yet allows easy trimming," said Dominic Petrella of Petrella Concrete. "Dominic is a concrete artist; he skillfully carved the coves and arches that gave the cellar a great look," Johnson said.

With more than 90 years of combined experience, the team of shotcrete applicators finished the project on time with superior performance, in part thanks to MAPEI technology and expertise.

TECHNICAL DATA

Houston Oaks wine cellar – The Clubs at Houston Oaks, Hockley, Texas (USA)

Year of construction: 2018

Year of MAPEI involvement: 2018

Where MAPEI products were used: *Mapequick AFK 888* was added to the shotcrete that was applied onto the wine cellar's walls and ceiling.

Shotcrete installer: Applied Shotcrete

Trimmer and carving: Dominic Petrella

General contractor: Byer Builders, Inc.

Pumping contractor: Oscar Orduno, Inc.

Ready-mix supplier: Lauren Concrete

MAPEI coordinator: Bill Allen

Challenges: Five-day installation time frame; three layers of shotcrete; underground conditions; 250 cubic yards (6 750 m³) of concrete; and cavern with vertical and overhead substrates, columns, coves and arches

MAPEI Products

Accelerator for shotcrete: *Mapequick AFK 288*



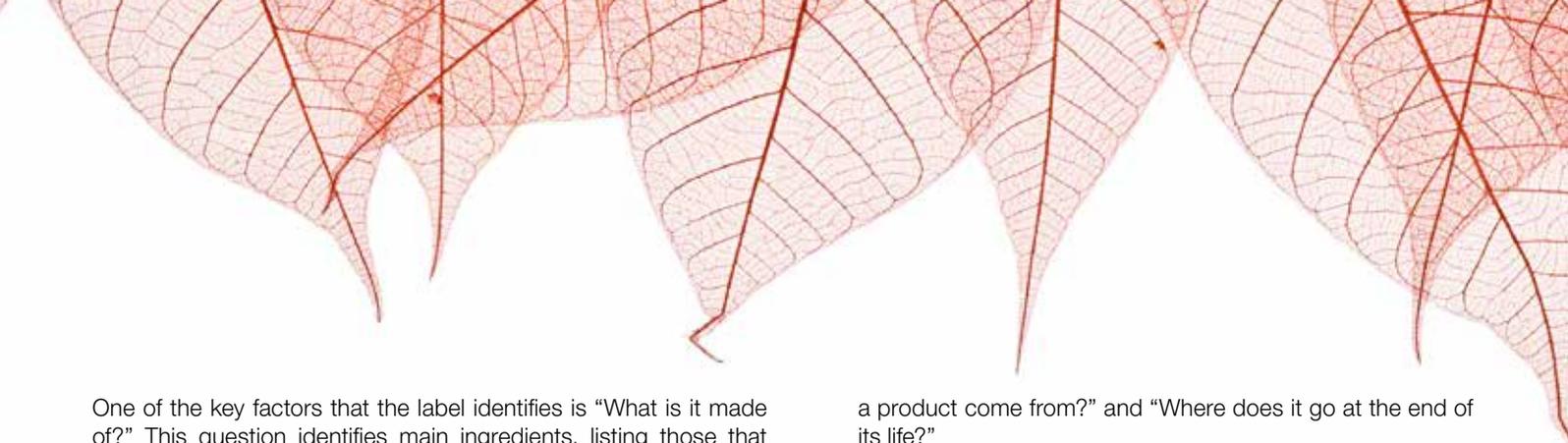
How transparency about MAPEI product ingredients benefits specifiers, builders and end users

In the 1980s, MAPEI championed the importance of “sustainable chemistry” with the introduction of the *Ultrabond ECO*[®] line of adhesives, which dramatically reduced or eliminated volatile organic compounds (VOCs) by moving away from solvent-based to water-based adhesives. The construction industry soon began to see the importance of sustainable practices within the industry itself. This led to the inception of the U.S. Green Building Council (USGBC) and its Leadership in Energy and Environmental Design (LEED) in 1993, the Living Building Challenge (LBC) in 2006, and the WELL Building Standard in 2015, which places a greater emphasis on the “health and well-being” of the building’s occupants – not just on the sustainable design of the building.

The LBC is a global initiative of the International Living Future Institute (ILFI), which instituted the LBC in order to create sustainable buildings that reconnect occupants with nature. The LBC includes seven performance categories, called “petals,” in keeping with the program’s environmentally friendly theme. The Materials petal includes the “Red List,” which contains building materials and chemicals that are responsible for “many adverse environmental issues, including personal illness, habitat and species loss, pollution, and resource depletion.” An LBC building project may not contain any of the Red Listed materials, chemicals, or chemical groups (down to a threshold level of 100 ppm). The current Red List contains 800+ chemicals that are harmful for human health and the environment.

Participation in the LBC is voluntary and non-regulatory-based. In order to help specifiers, contractors and consumers identify these hazardous chemicals that should be avoided in building materials, and to help specify products used on LBC construction projects, LBC has created a labeling program. Known as Declare Labels, this transparency program creates a product database that identifies the following:

- What is it made of?
- Where does a product come from?
- Where does it go at the end of its life?



One of the key factors that the label identifies is “What is it made of?” This question identifies main ingredients, listing those that are potentially hazardous and those that could be or are found on the LBC Red List. This voluntary list is updated as new science becomes available, identifying new hazardous materials of concern. The Red List provides the chemical name and the corresponding CAS Registry Numbers. The CAS Registry is maintained by the American Chemical Society (ACS) and provides unique, unmistakable identifiers for chemical substances that correspond with each Red Listed item.

Perhaps the best way to visualize the intent of the Red List is to think about it in terms of grocery shopping: What is one of the first things we do when we pick up a packaged product? We turn it over and look at the back to see the listed ingredients, so that we can make an informed decision about whether to purchase the product. Since 1973, FDA regulations have mandated that food packaging include ingredients and the number of calories, as well as the amount of protein, carbohydrates, fat, sodium and so forth to better educate the consumers. LBC is working toward a similar goal with chemicals and construction products, so building owners, designers and specifiers can select products based not only on performance, but also on reduced or zero hazardous ingredients.

MAPEI’s environmental commitment

One of MAPEI’s Seven Pillars for Growth is to “Lead in Environmental Health and Safety.” To achieve this goal, MAPEI understands the need to continually innovate its product formulations. When a product is in the developmental stage, all factors influencing its impact on the environment and human health are evaluated from a sustainable perspective. This includes reducing and replacing “chemicals of concern” and LBC Red Listed chemicals (e.g., formaldehyde, phthalates and isocyanates) with water-based chemicals that have lower risk factors and do not compromise product performance and workability. MAPEI products meeting this criterion will be identified as LBC “Red List Free” on their Technical Data Sheets. MAPEI’s participation in this program provides valuable information to specifiers (the products may contribute to LEED points), installers (the products are nontoxic), and the building’s occupants (there will be no off-gassing of harmful chemicals or substances in their homes during the life cycle of the product).

MAPEI’s commitment to balancing performance with sustainability does not stop with Red List Free products:

- MAPEI’s Safety Data Sheets clearly communicate products’ regulatory compliance with federal and state requirements, including requirements for labeling and transportation.
- MAPEI provides Environmental Product Declarations (EPDs), which are concise environmental product performance reports that are based on Life-Cycle Analysis (LCA) and demonstrate a product’s impacts from extraction of raw materials and processing to distribution, to use, to end of life. EPDs answer the Declare program’s questions “Where does

a product come from?” and “Where does it go at the end of its life?”

- Many MAPEI products carry Green Squared Certification, based on the ANSI A138.1 consensus standard (third-party certified), which covers tile product characteristics, manufacturing, end-of-product-life management, progressive corporate governance and innovation to establish sustainability criteria for products throughout their entire life cycle from substrate to the finished tile surface.
- MAPEI makes a priority of complying with VOC content levels as specified by South Coast Air Quality Management District (SCAQMD), Rule #1168 for adhesives and sealants or Rule #1113 for architectural coatings. VOC content is a product’s “potential” to release VOCs into the occupied space given the right environmental conditions. This potential is mitigated through the use of low- or no-VOC chemicals.
- MAPEI also prioritizes compliance with VOC emissions levels as specified by the California Department of Public Health’s Section 01350. The testing method utilizes a chamber that simulates the “real world” conditions in an occupied building and quantifies the VOCs and chemicals emitted into the air. By using this testing method, the amount of VOCs emitted can be determined and regulated.

MAPEI’s commitment to sustainability and to ensuring that many of its products are Red List Free has a triple benefit. Specifiers can write MAPEI products into project specifications with the knowledge that those products are high-performance while possibly also qualifying for LEED and LBC points. Builders can apply MAPEI products with the knowledge that they are not being exposed to toxic chemicals or harmful substances. And building occupants can enjoy a healthy living environment with the added benefit of a home constructed with high-quality building materials.

In the next issue of *Realtà MAPEI Americas* magazine, we’ll take a closer look at the Manufacturer’s Inventory (MI) credit in LEED to address “chemical transparency” and how MAPEI’s product sustainability reports address such credits in specifying products that excel in performance and transparency.



About the author:
Cris Bierschank

Cris is the Sustainability Manager for MAPEI. As a LEED Green Associate and member of the International Living Future Institute (ILFI), he assists customers involved in sustainable projects, such as LEED and Living Building Challenge (LBC).

SHIP RESCUE

After a hurricane, MAPEI marine products get a cruise ship's refurbishment back on track



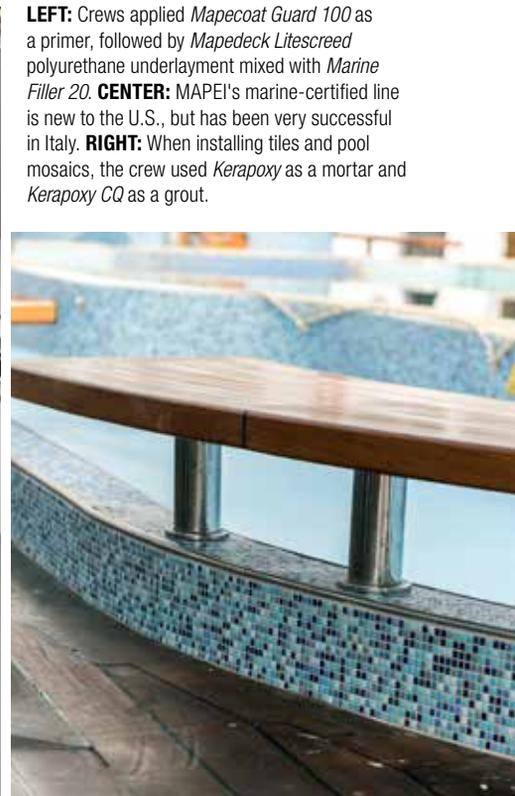
The Carnival Elation cruise ship

Overview: MAPEI's line of marine industry products brought beauty, durability and speed to a rehab project for which time was more critical than normal.

Elation. Webster's dictionary defines "elation" as "a feeling or state of great joy or pride." Without doubt, that word is an apt description for the travelers on and the owners of Carnival Cruise Line's cruise ship, Carnival Elation. Sailing primarily from Jacksonville, Florida, and measuring 855 feet (261 m) long, the 2,130-passenger Elation sails multi-night cruises to the Bahamas and Eastern Caribbean islands.

One of the line's most popular cruise ships, Carnival Elation is a floating city, with foot traffic patterns replacing automobile congestion. The thousands of partying, dancing and sunbathing tourists take a toll on her decks. Additionally, spilled drinks and food, as well as constant exposure to salt water and sea air, create a corrosive environment that cannot go unaddressed for long periods of time. So, every three to five years, the Elation – just like every cruise ship – undergoes complete refurbishment.

At the end of August 2017, Carnival Elation sailed into dry dock at Grand Bahama Shipyard in Freeport, Bahamas, for her scheduled complete refurbishment. Specified for a large part of the restoration



LEFT: Crews applied *Mapecoat Guard 100* as a primer, followed by *Mapedeck Litescreed* polyurethane underlayment mixed with *Marine Filler 20*. **CENTER:** MAPEI's marine-certified line is new to the U.S., but has been very successful in Italy. **RIGHT:** When installing tiles and pool mosaics, the crew used *Kerapoxy* as a mortar and *Kerapoxy CQ* as a grout.

project was MAPEI's Products for the Marine Industry line, which debuted in the United States in June 2017 under the stewardship of Guido Sardi, Business Development Manager for MAPEI's Marine Division.

As expected, a shipboard jobsite is slightly different from one on land. During a cruise ship's restoration process, "every main contractor is usually awarded one or more projects onboard," Sardi explained. "They realize the project through, from the demolition of the existing area to the final delivery of the new area as agreed upon with the ship owner's architect."

Precetti Inc. was the general contractor awarded the job of refitting the mid-ship pool area of Deck 10, a project that included sanding the real teak flooring; refurbishing all bars and restaurants in this area; demolishing the existing pool down to bare steel; and applying a new coating on the pool trunk, pool beach and pool coamings. MAPEI's marine products were specified for the work.

Nova Marine Service LLC won the bid to completely refurbish Tiffany's Lido Restaurant on Deck 10 aft, as well as the SPA Carnival lobby and the corridors on Deck 12 forward. As with the Precetti crew's jobsite, MAPEI products were specified for Nova Marine's work. Sardi was on hand, dividing his time between both crews to ensure that installations followed MAPEI's high standards.

With jobsite scheduling complete, and crews and products in place, *Elation* was ready for a total tear-down and restoration. She was scheduled to leave dry dock on September 27 and reenter the Carnival fleet revamped as a "Fun Ship 2.0," with new cabins, new restaurants and even a reconfigured deck. But Mother Nature had other plans.

A hurricane impacts the project

As *Elation* was entering the Bahamas dry dock for rehabilitation, a storm was forming off of Cape Verde in the central Atlantic Ocean.

By August 31, that storm developed into a Category 3 hurricane named *Irma*. With wind speeds up to 180 mph and barometric pressure dropping to 914 mbars, *Irma* fluctuated between Category 5 and Category 4 designations for several days, bringing death and destruction with her. The Bahamas were right in Hurricane *Irma*'s path. As a safety measure, the islands were evacuated and work on the *Elation* came to a halt. Sardi described the scene: "The ship left Grand Bahamas Shipyard and sailed with all the contractors and Carnival superintendents and crew for some days before sailing back to the shipyard to re-start with all the jobs on board."

Irma became the fifth costliest Atlantic hurricane in recorded U.S. history, striking the Bahamas on September 8. Although it caused no fatalities there, it caused \$135 million in damage. Given the fact that *Irma*'s total death toll was 134¹ and overall damage reached upward of \$64.8 billion USD², the Bahamas were fortunate to have such limited consequences.

However, by the time that work resumed on the *Elation*, she had already been in dry dock longer than scheduled. The race was on to complete the rehab and return the cruise ship to service.

¹ John P. Cangialosi; Andrew S. Latto; Robbie J. Berg (March 9, 2018). [Hurricane Irma \(AL112017\)](#). PDF. National Hurricane Center, Tropical Cyclone Report. Retrieved March 12, 2018.

² James Daniell; Bernhard Mühr; Antonios Pomonis; Andreas Schäfer; Susanna Mohr. [Hurricane Irma: Report No. 1, Focus on Caribbean up until 8th September 2017](#). PDF. Center for Disaster Management and Risk Reduction Technology. Retrieved March 12, 2018.

MAPEI products on the jobsite

Working to restore the mid-ship pool area on Deck 10, the Precetti crew was responsible for ensuring that the shipboard pool and surrounding bars and restaurants were as spectacular as the architects specified — these were some of the most popular, high-traffic areas on board.

A thin layer of MAPEI's anti-corrosive marine primer **Mapecoat Guard 100** was applied to the prepared surface. Then, to level and protect, the crew used the brand-new, Marine-certified, self-leveling polyurethane underlayment **Mapedeck Litescreed** (an Italian product planned for an upcoming U.S. debut) mixed with **Marine Filler 20**. The new, Marine-certified, thixotropic polyurethane underlayment **Mapedeck Litescreed Tixo** (another Italian product) was used to level the uneven vertical steel in the pool beach and coamings. The Precetti team used **Kerapoxy** as a mortar and **Kerapoxy CQ** grout to install the tiles in addition to the pool mosaics.

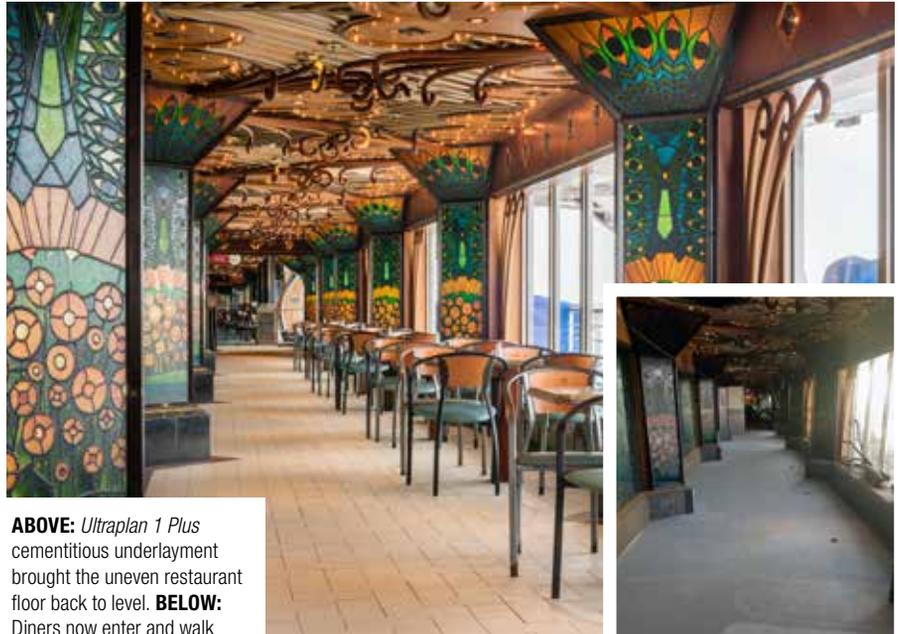
At the same time, Nova Marine Services LLC was hard at work refitting the worn, high-traffic floors of Tiffany's Lido Restaurant (located in the aft area of Deck 10) as well as the SPA Carnival lobby and the corridors in the forward area of Deck 12.

In each of these areas, the steel deck had been worn down by high levels of foot traffic to a point of noticeable unevenness. In order to re-level the steel substrate, the Nova Marine crew used **Ultraplan 1 Plus**, MAPEI's quick-setting, self-leveling, cementitious underlayment. This was topped with **Planibond EBA** high-modulus epoxy bonding agent. After a broadcast of quartz sand, tiles were set with **Granirapid** and grouted with **Ultracolor Plus** (warm gray color).

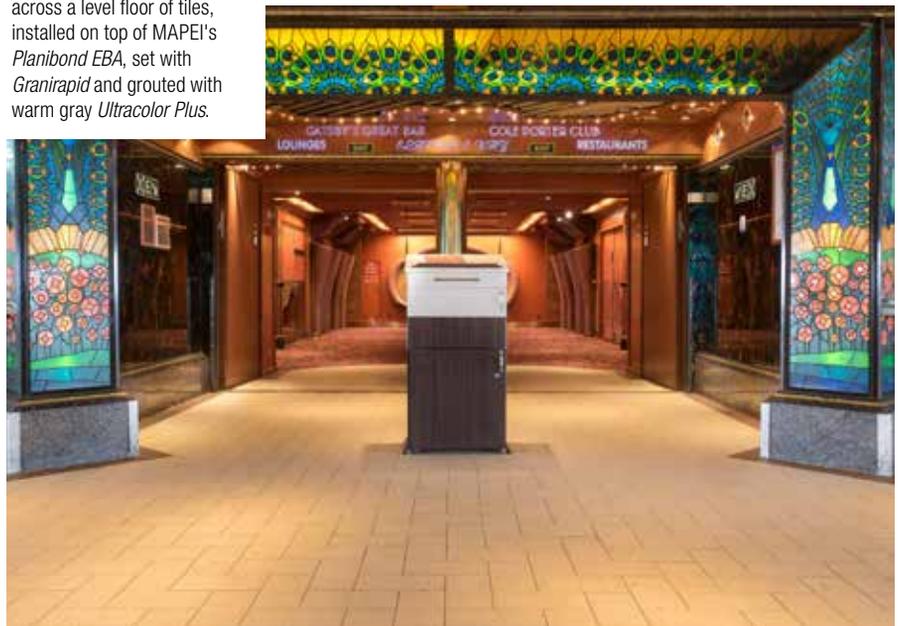
MAPEI products used in the project provided rapid setting time and curing speed as well as vital durability.

Although the Elation was originally scheduled to return to service on September 28, the unexpected delay caused by Irma's visit pushed the ship's official re-entry to October 7 – just a week's delay on an island ravaged by a powerful hurricane. However, time is money in a construction project, and every day in dry dock is lost revenue for Carnival; scheduled days are the cost of business, and too many unscheduled days could "sink the boat." Thankfully, the quick curing of MAPEI products meant that the pool could be filled, the corridors walked down, the restaurants enjoyed, and the Elation returned to service without a longer – costlier – delay.

"The ship was a hive of jobsites with contractors working independently and coordinating work around one another," Sardi said. MAPEI Marine Products played an important role, helping to create a ship of which the owners can be proud. Sardi and the crew from Precetti Inc. and Nova Marine LLC certainly are proud of their work. For all involved, Carnival's Elation embodies her name.



ABOVE: *Ultraplan 1 Plus* cementitious underlayment brought the uneven restaurant floor back to level. **BELOW:** Diners now enter and walk across a level floor of tiles, installed on top of MAPEI's *Planibond EBA*, set with *Granirapid* and grouted with warm gray *Ultracolor Plus*.



TECHNICAL DATA

Carnival Elation – Dry-docked at Freeport, The Bahamas

Year of construction: 1998

Year of MAPEI involvement: 2017

Where MAPEI products were used: Mid-ship pool area of Deck 10, Tiffany's Lido Restaurant on Deck 10 aft, SPA Carnival lobby, corridors on Deck 12 forward

General contractor: Precetti Inc. and Nova Marine Service LLC

MAPEI coordinator: Guido Sardi

Challenges: Hurricane Irma struck the Bahamas during the project

MAPEI Products

Primers: **Planibond EBA**, **Mapecoat Guard 100**

Mortars: **Granirapid**, **Kerapoxy**

Grouts: **Ultracolor Plus**, **Kerapoxy CQ**

Leveling underlayments: **Ultraplan 1 Plus**, **Mapedeck Litescreed**, **Marine Filler 20**, **Mapedeck Litescreed Tixo**



The Galleria at Fort Lauderdale

MALL OVERHAUL

The holiday shopping rush was no match for the speed and durability of MAPEI's concrete restoration, waterproofing and coating systems.

Overview: Whether used on the mall's facade or on its parking garage, MAPEI's concrete restoration system ensured that walls were smooth, level and the perfect customized color.

The call came in just as MAPEI Concrete Restoration Specialist Carlos Hernandez was considering his 2017 end-of-year holiday plans. Because the Galleria at Fort Lauderdale was so pleased with the 50,000 square feet (4 645 m²) of MAPEI's **Planitop XS** and **Elastocolor** products that had been applied to the facade of the H&M store, they wanted to discuss a contract for more work. "A lot more," Hernandez said with a chuckle. "The owners were extremely happy with the concrete restoration work and custom colored coatings."

The Galleria at Fort Lauderdale is one of South Florida's largest shopping destinations. Featuring 1,400,000 square feet (130 064 m²) of retail floor space, the massive mall is home to more than 120 retailers, including Neiman Marcus, Macy's, Banana Republic, Apple, Sephora, Pandora and, of course, H&M. The Galleria also features recreational areas, a spa and more than a dozen fine-dining restaurants. A busy hub located in the heart of Fort Lauderdale, the Galleria is the site of social and promotional events that attract



Application of *Elastocolor Coat* gave the mall a facelift in the form of a fresh waterproof coating.



thousands of business people, tourists and Florida residents – in addition to the average number of shoppers.

Maintaining the high-end appearance of this highly visible, highly popular mall is vital to the owners. Further, it is not surprising that all of this traffic causes routine wear and tear that can, in turn, become a safety issue if not addressed. In addition to being unsightly, damaged or corroded concrete can pose a risk to guests and employees. Owners of the Galleria address problems whenever they are spotted, even if that means starting construction at the beginning of the holiday shopping season. That's where MAPEI, Carlos Hernandez, and the crew from General Caulking and Coatings (GCC) came into the picture.

MAPEI products on the job

"The job started in December of 2017," Hernandez said. "The areas that were specified in the Scope of Work were the facades and vertical elevations of the mall's southeast section, the exterior facade of the parking garage, and the loading dock and hall areas inside the eastern section of the mall. It was 185,000 square feet [17 187 m²] in total."

Working as MAPEI's Concrete Restoration Specialist with a seven-to 10-man crew from GCC, Hernandez and the crew systematically planned their work around the frantic holiday shopping crowds. "We would start early in the morning before the mall opened," he said, describing their strategy for working on the mall facades.

And when it came time to address the parking garage? "We blocked off the sections in which we were working by using cones and caution tape, preventing the public from accessing those areas," Hernandez explained. "When we worked on the walls that were over the street access, we worked in lifts – tied off with four-point safety harnesses. And we did not spray-apply anything because trying to protect all of those people and cars from overspray would have been a logistic nightmare, especially during the holiday rush. Even in the morning and midday, the mall was busy. Also, we didn't spray-apply because the contractor and I both believe that you get better waterproofing properties by using a roller or a brush."

Before they could roller- or brush-apply *Elastocolor* products, however, they had to address the concrete itself. Hernandez described the application process, "Whether in the mall, the parking garage or the interior loading dock areas, the application process followed the same steps."

First, the concrete substrate was pressure-washed clean. Then, any necessary repairs were addressed with *Planitop XS*. The crew trowel-applied the one-component, fiber-reinforced, polymer-modified repair mortar onto any spalls or cracks. "If there was any exposed reinforcing steel, we applied *Mapofer 1K* coating onto it as a corrosion inhibitor prior to applying the *Planitop*. Then, once any exposed rebar was repaired and the delaminations and cracks were filled and level, we trowel-applied *Planiseal 88*," Hernandez said. *Planiseal 88* is a one-component, polymer-modified, cementitious coating used for waterproofing. The *Planiseal 88* was applied in all wall areas in which the existing paint had delaminated due to moisture coming from the negative side of the structure. Using trowels to apply the *Planiseal 88* also allowed the crew to achieve the fine texture pattern that the Galleria wanted, Hernandez explained.

Next came the roller application of one coat of *Elastocolor Primer WB*, the 100% acrylic primer designed for use with *Elastocolor Coat*. Following the primer, "we used rollers and brushes to apply two, 12-mil WFT coats of *Elastocolor Coat* in the Galleria's custom colors matched to the owner's requirements," Hernandez said. Depending on the area, those colors were light gray, light gray blue and light white.

Hernandez makes the process seem easy. Working with MAPEI products, it was. The challenge came with aspects of the jobsite itself. The first and largest challenge of working on this jobsite was due to project timing. "Holiday shoppers," Hernandez said with a small laugh. "We didn't work near them too much because we were largely able to schedule around them, but it made accessing the interior of the mall a challenge." The crew also had the challenge of fighting mall traffic with their trucks and equipment to get to the jobsite. The structure of the mall itself was difficult: The surface of the concrete featured a complex square design with a very rough texture. "We had to work it with brushes and thicker rollers," Hernandez explained. "We never used spray equipment."

The Galleria appreciated MAPEI's quality products, Hernandez' knowledge and the GCC team's attention to detail. And they will be back at work at the Galleria. The specifications for the rehabilitation of the north section of the mall are scheduled for next year.

TECHNICAL DATA

The Galleria at Fort Lauderdale – Fort Lauderdale, FL (USA)

Years of construction: 1980-1983

Years of MAPEI involvement: 2017-2018, ongoing

Where MAPEI products were used: Exterior mall and parking garage facades, interior loading hallways

General contractor: General Caulking and Coatings (GCC)

MAPEI distributor: National Waterproofing Supply

MAPEI coordinator: Carlos Hernandez

Challenges: Project started during holiday shopping rush; rough textured concrete surface; public made it difficult to access interior hallways

MAPEI Products

Surface preparation: *Planitop*® XS

Corrosion inhibition: *Mapofer*™ 1K

Leveling/waterproofing: *Planiseal*® 88

Primer: *Elastocolor*® Primer WB

Waterproofing coating: *Elastocolor Coat*

DRIVEN BY DEADLINES

MAPEI products help Porsche dealership in reaching finish line



Porsche Rive-Sud – Saint-Hubert, QC, Canada



Overview: During construction of a luxury automotive dealership, MAPEI products were used for surface preparation, waterproofing, uncoupling protection, and tile and stone installation. High moisture content and a fast-approaching deadline were no match for these products, which produced award-winning results.

In 2016, Porsche Cars Canada, Ltd. (PCL), along with Groupe Lauzon, broke ground to extend its automotive retail locations with the addition of Porsche Rive-Sud, located in Montreal's South Shore. The four-level facility spans 100,000 square feet (9 290 m²) and features interior parking, a 17-car showroom, 15 service bays, a café lounge and more.

To complete the construction, Les Carrelages Serco Inc. was contracted to put the finishing touches on the floors and walls, including the installation of large-format tiles in the drive-through of the dealership's auto repair shop. Due to earlier construction delays, the Les Carrelages crew was faced with a restrictive timeline in which to complete the project before the dealership's scheduled grand opening in October 2017. Successful completion of the project meant not only meeting the fast-approaching deadline, but also meeting Porsche's prestigious standards.

To reach this goal, Les Carrelages turned to MAPEI products because of their long-held reputation for high quality, durability and



speed of installation. "It was a no-brainer, really. MAPEI is a brand that I trust to get the job done," said Serge Laflamme, president of Les Carrelages.

MAPEI products on the jobsite

MAPEI tile and stone products were used on a total of 15,000 square feet (1 394 m²) within Porsche Rive-Sud, including on the floors throughout the dealership and on the walls in the washrooms.

The Les Carrelages crew started with the floors. Given that the tile would be subjected to heavy rolling loads on a daily basis, the crew began with the installation of **Mapeguard UM** underlayment membrane. In addition to waterproofing, this membrane provides uncoupling protection and crack suppression. Crew members applied **Mapeguard UM** over a base of **Ultraflex 2** tile mortar to ensure a good bond to the concrete substrate. They then set large-format tile using **Ultraflex LHT** mortar, which is designed especially for large and heavy tiles.

When the floor was finished, the Les Carrelages crew turned its attention to the walls, using **MAPEI Ultralite Mortar** to set tiles on the vertical surfaces. All of the tile joints – whether on the floors or on the walls – were grouted with **Ultracolor Plus FA**, a grout designed for small and large joints alike that eliminates the need for two types of grout. Not only was this convenient, it added speed to the installation.

Laflamme said that the most challenging aspect of this project was trying to meet the restrictive deadline while working in the high-humidity conditions within the dealership's workshop. He explained that **Mapeguard UM** was essential in surmounting this challenge. **Mapeguard UM** proved to be effective in combating the moisture vapor emitted from the concrete floor and in creating a smooth and flat surface on which to install floor tiles. In addition, the product's fast-track capability allowed Les Carrelages to meet its deadline in time for the scheduled grand opening.



On October 12, 2017, Porsche Rive-Sud successfully held its grand-opening launch party for Porsche owners and enthusiasts, who were highly impressed by the new dealership. In fact, the Porsche Rive-Sud project was so notable that it earned MAPEI two Hardsurface Awards – including the award for Project of the Year – at the Terrazzo, Tile and Marble Association of Canada’s annual convention in June 2018.

TECHNICAL DATA

Porsche Rive-Sud – Saint-Hubert, QC, Canada

Year of construction: 2016-2017

Year of MAPEI involvement: 2017

Where MAPEI products were used: On the floors throughout the dealership and on the walls in the washroom

Project owner: Groupe Lauzon

Project manager: Serge Laflamme

General contractor: Construction Vincent & Dussault

Installer: Les Carrelages Serco Inc.

MAPEI distributor: Prosol Distribution

MAPEI coordinator: Francois Croteau

Challenges: High moisture content in floors; tight deadline

MAPEI Products

Underlayment, crack suppression and waterproofing: *Mapeguard® UM*

Waterproofing sealing tape: *Mapeguard ST*

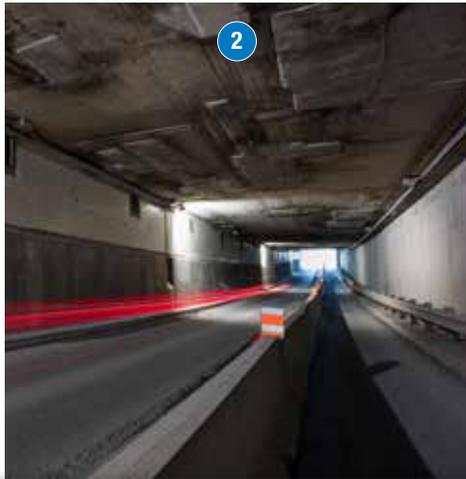
Tile mortar: *Ultraflex™ 2*

Joint sealant: *Mapesil™ T*

Large-and-heavy tile mortar: *Ultraflex LHT®*

Wall tile mortar: *MAPEI Ultralite™ Mortar*

Grout: *Ultracolor® Plus FA*

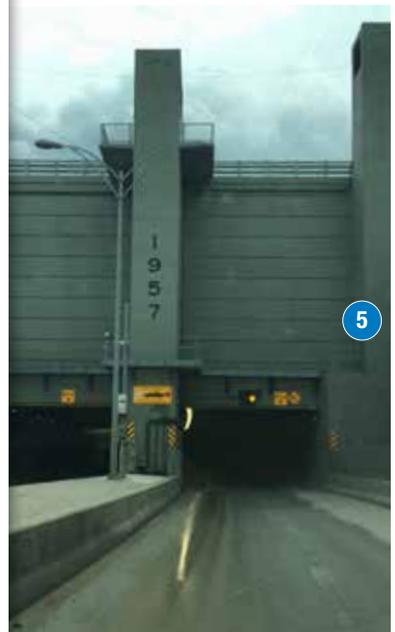
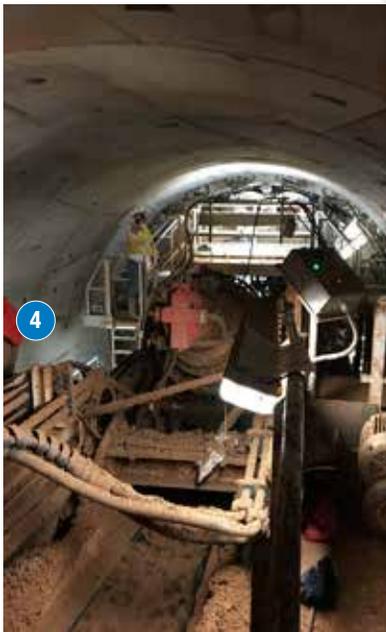


TUNNELS AROUND THE WORLD

MAPEI is known for its cutting-edge adhesives and underlayment technologies, but some of its greatest technological advances are being utilized on projects even deeper than subflooring. MAPEI's Underground Technology Team (UTT) is the answer to the construction industry's demand for high-quality foaming agents, lubricants, accelerators, admixtures, waterproofing membranes, mortars, coatings and sealants for underground construction and tunneling.

The projects included on this page represent some of MAPEI's tunneling success stories in the United States and Canada. There are others across the world. The next time you leave daylight and pass into the darkness of a tunnel, pay attention. There is a great probability that the technology used to create the tunnel has been developed by MAPEI.

- 1 Brooklyn Battery Tunnel – New York City, NY, USA
- 2 St. Remi Tunnel – Montreal, QC, Canada
- 3 Ottawa Light Rail Transit Tunnel – Ottawa, ON, Canada
- 4 Anacostia River Tunnel – Washington, D.C., USA
- 5 Melocheville Tunnel – Beauharnois, QC, Canada
- 6 Salisbury Pedestrian Tunnel – Salisbury, MD, USA
- 7 West Block Tunnel – Ottawa, ON, Canada
- 8 Chesapeake Bay Bridge-Tunnel – Cape Charles, VA, USA





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.

MTI revamps its logo and program

The MAPEI Technical Institute (MTI) has introduced a redesigned logo in conjunction with a global rebranding of the company's international education initiatives.

The rebrand features the classic MAPEI beaker topped with a graduation cap and left-sided tassel, an ode to the commencement ceremony where graduates flip their tassels after earning a diploma. Minimal and modern, the new logo comes in two variations – one featuring the phrase “MAPEI Technical Institute” to describe trainings and workshops. The other logo variation features the phrase “MAPEI Technical Institute TV,” for



use with the MTI-TV videos hosted by Dan Marvin, MAPEI's Director of Technical Services, and Sam Biondo, MAPEI's National Technical Presenter. With this redesign, the new MTI logo visually focuses on high-quality installation education.

Along with the updated logo, MTI has seen an expansion in the number of its education sessions in the United States and Canada. New trainers have also been added for the United States, which has set up new training areas at the MAPEI plants in San Bernardino, CA; Dalton, GA; and Swedesboro, NJ. The MAPEI facility in Calgary, AB, is also home to a new training area.

MTI is a three-pronged education outreach program:

1. To offer industry insights and a better understanding into industry standards, MTI facilities host official product education events, which are hands-on workshops that provide education on new and existing MAPEI products. Technical experts also offer educational sessions at distributor site locations across the United States.
2. Short MTI-TV videos inform about cutting-edge products, problem-solving solutions and step-by-step installations. The videos are available on mapei.com and on YouTube in English, French and Spanish.
3. The tradeshow favorite, MAPEI *Live!*, features Sam Biondo and a team of MAPEI sales representatives performing live demos of our latest products at national tradeshow events such as The International Surface Event (TISE), National Wood Flooring Association (NWFA) Expo, Coverings, and World of Concrete (WOC).

MTI is also an active supporter of the National Tile Contractors Association (NTCA) and the International Concrete Repair Institute (ICRI).



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 expands with locations and product lines

MAPEI Corporation has expanded company operations with two new locations, in Georgia and Florida. Both locations will initially operate as warehouses, providing local support for customers, expediting shipments and facilitating continued growth in North America. These facilities will shortly transition into plants to increase MAPEI's production capabilities.

The first of two locations stands at 100,000 square feet (9 290 m²) on 18.29 acres (7.40 hectares) in Wildwood, Florida, with future plans to expand the facility to 260,000 square feet (24 155 m²) to accommodate multiple powder lines. Located north of Tampa, the facility will significantly increase product availability and services to customers in northern Florida, Georgia, Alabama, Mississippi and other surrounding states. The Wildwood acquisition also includes significant acreage for future expansion.

The second location is a 210,000-square-foot (19 509 m²) building on 21.31 acres (8.62 hectares) in Calhoun, Georgia. "This facility will immediately operate as a warehouse, but it will transition to become our new plant for manufacturing products for resilient flooring as well as other products," said Luigi Di Geso, President and CEO of MAPEI North America. "This location will be developed

with the latest production equipment and will feature a state-of-the-art laboratory for resilient and chemical development."

With these latest acquisitions in Florida and Georgia, MAPEI Corporation operates 18 plants and warehouses in the United States. Plans for further expansions are forthcoming, according to Di Geso. "MAPEI is committed to continually investing for our present and future growth. These expansions are major investments to ensure that we are giving our customers the best service possible, and we will continue to expand our footprint in the Americas," he said.

This year, MAPEI Corporation's expansions of existing facilities included the addition of various new production lines. For powders, the company added two lines in its West Chicago facility, one line in California, two lines in New Jersey, one line in Virginia, and one line in its Dalton (Georgia) facility. For polymers, MAPEI added one vinyl polymer production line in its West Chicago facility.

The property acquisitions were finalized for the Wildwood facility on March 26 and for the Calhoun property on April 20. These new facilities will create full-time job opportunities in the manufacturing industry and boost economic development in the areas.

Calhoun, Georgia



Wildwood, Florida



COUNTRY-SPECIFIC



MAPEI channels are now exclusive to the USA and Canada

MAPEI North America has divided its social media channels that were previously shared by the United States and Canada. The company has launched separate social media channels that are designated as @MAPEIUSA and @MAPEICanada. Respectively, the company has also changed its social media hashtags to #MAPEIUSA and #MAPEICanada.

This change reflects MAPEI's dedication to better address the needs of its customers on a local level. By individualizing and localizing these social media channels, MAPEI will be able to better highlight the unique aspects of each country's market, such as specific products, languages, events and industry-related topics.

"We are excited to launch @MAPEICanada in order to provide localized content to Canadians," said Yoanna Pergantis, Marketing Manager of the Canadian subsidiary MAPEI Inc., "and to start conversations with customers and people interested in learning about MAPEI and our world-class products for the construction industry in both English and French."

Steven Day, Director of Operational Marketing for the USA subsidiary MAPEI Corporation, added, "The creation of @MAPEIUSA and @MAPEICanada allows us to better reach clients in each area, providing specific information in an even more responsive manner. This is just another part of MAPEI's commitment to leading the construction industry and providing our customers with the right information they are looking for."



It's easy to stay connected with MAPEI's social media channels:

USA channels

Facebook/@MAPEIUSA
Twitter/@MAPEIUSA
Instagram/@MAPEIUSA
YouTube/@MAPEIUSA
LinkedIn/@MAPEIUSA

Canada channels

Facebook/@MAPEICanada
Twitter/@MAPEICanada
Instagram/@MAPEICanada
YouTube/@MAPEICanada
LinkedIn/@MAPEICanada

Please use the country-appropriate hashtag (#MAPEIUSA or #MAPEICanada), in addition to topic-specific hashtags, each time that you make a post. This will help us continue to build our social networks.

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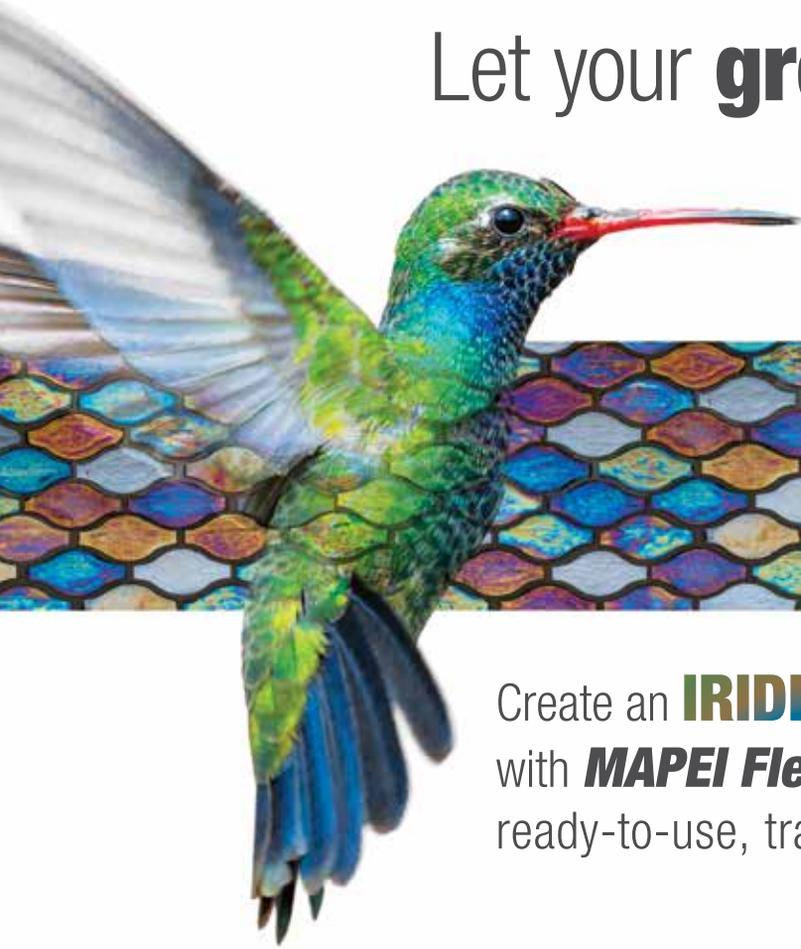
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