

# Realtà MAPEI

NORTH AMERICA

## A Hole In One

*Mapesoil 100 and Ultrabond Turf PU 1K*  
help rebuild a flooded golf course



ISSUE 30



## Faster, further... together

We are approaching the end of the year and making great progress toward reaching our goals. I always say we go faster and further together and, as a team, we've been determined and focused and it is paying off – through all of our departments and across all of our product lines. I thank this great team for all its hard work.

### Luigi Di Geso

President and CEO,  
MAPEI North America

This issue of *Realtà MAPEI North America* provides examples of this teamwork-based growth:

- MAPEI was named Fishman Flooring Solutions' "Vendor Partner of the Year," reflecting our strong relationship with our distributors. MAPEI was also honored by Fuse Alliance with the Supplier Award for providing "Best Support." Both of these awards demonstrate the hard work and support provided by our Floor Covering Installation Systems and Tile & Stone Installation Systems (FCIS and TSIS) teams.
- Our Underground Technology Team (UTT) recently completed work at one of the largest mining facilities in the United States, supplying product to shore up and stabilize the mine's rock crushing machinery. MAPEI's UTT specialists were the only bidders capable of providing not only the best-in-class product, but also the 24-hour service that the mine required.
- Our Concrete Restoration Systems (CRS) team recently helped save the town of Oroville, California. When the Oroville Dam Spillway cracked, the town of Oroville was in extreme danger and had to be evacuated. Our team supplied technical advice and **Planigrout 755** to fill the voids in the concrete, stabilizing the structural rebar, repairing the cracks and keeping Lake Oroville from flooding the town below.
- Our Canadian colleagues at MAPEI Inc. recently completed an award-winning floor at the Canada Science and Technology Museum in Ottawa, Ontario, the largest museum of its kind in Canada. Working against tight deadlines and high scrutiny, the CRS team created a floor that will not only withstand a high volume of foot traffic, it will also retain a high-polish shine.
- Our Caribbean colleagues helped lead the way in a recent humanitarian effort following Hurricane Dorian. Having experienced first-hand the devastation caused by Hurricane Maria, our colleagues at MAPEI Caribe Inc. knew what items would be especially useful during the rebuilding process. They joined with MAPEI Corporation to send roofing materials and building supplies to the Bahamas Hurricane Relief Effort, all quickly coordinated and shipped through a single third-party distributor in Ft. Lauderdale. In this instance, our teamwork-inspired close lines of communication paid off, resulting in a logistical accomplishment designed to help our friends and neighbors in the Bahamas.

These are just a few of the recent examples of the effects of our hard work. They are important for many reasons, not least because they show that our internal teamwork has external results. It may not always be as dramatic as helping to save an entire town or rebuilding devastated islands, but when we work together, we accomplish great things. I know we'll work together and finish this second half of the year stronger than ever – exceeding our goals and industry expectations – because we are Team MAPEI.

Sincerely,



## TOP STORY

- 2 The wide scope of MAPEI's construction solutions might surprise you

## PROJECT REFERENCES

- 7 Oroville Dam Spillway
- 9 Canadian Science and Technology Museum
- 18 The Kartrite Resort & Indoor Waterpark
- 23 Rock crusher's foundation in limestone mine
- 36 Topgolf soil stabilization

## SPECIAL FEATURES

- 12 Repair, replace or resurface?
- 16 MAPEI's Tall Tales
- 30 Innovation, education and excellence take center stage at trade shows

## TECHNICAL FEATURES

- 14 Protecting reinforcement rods in reinforced concrete from corrosion
- 26 With *Re-Con Zero™ Evo*, concrete becomes reusable and sustainable
- 28 How admixtures can address the shortage of raw materials
- 40 Environmental Product Declarations for MAPEI products help in certifying projects as green

## SINGLE-SOURCE SYSTEM

Solution for wood flooring with sound reduction

## PRODUCT SPOTLIGHTS

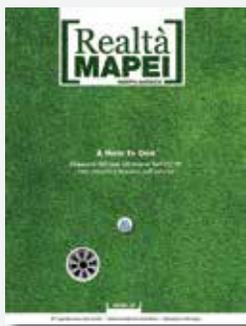
- 22 *Ultraplan® Extreme 2*
- 39 *Ultracoat® Gym* and *Ultracoat Gym Pro*

## MAPEI TECHNICAL INSTITUTE NEWS

## BUSINESS NEWS



MAPEI USA  
MAPEI Canada



**ON THE COVER**  
*Mapesoil 100* and *Ultrabond Turf PU 1K* help rebuild a flooded golf course

### EDITOR

Jennifer Kramer

### EDITORIAL CONTRIBUTORS

Amilcare Collina, Giorgio Ferrari, Princess Pitts, David Sedan, Brittany Storm

### PRODUCTION EDITORS

Brian Hedberg, Corey Siggins

### GRAPHIC DESIGNER

Stephen Gil

### CONTRIBUTING PHOTOGRAPHER

Raul Ballester

### PRODUCTION MANAGER

Jeremy Mitchell

### DIRECTOR OF OPERATIONAL MARKETING

Steven Day

### PRESIDENT AND CEO

Luigi Di Geso

### PUBLISHER

MAPEI Corporation  
Headquarters of North America  
1144 E. Newport Center Drive  
Deerfield Beach, FL 33442

### MAPEI GLOBAL CORPORATE HEADQUARTERS

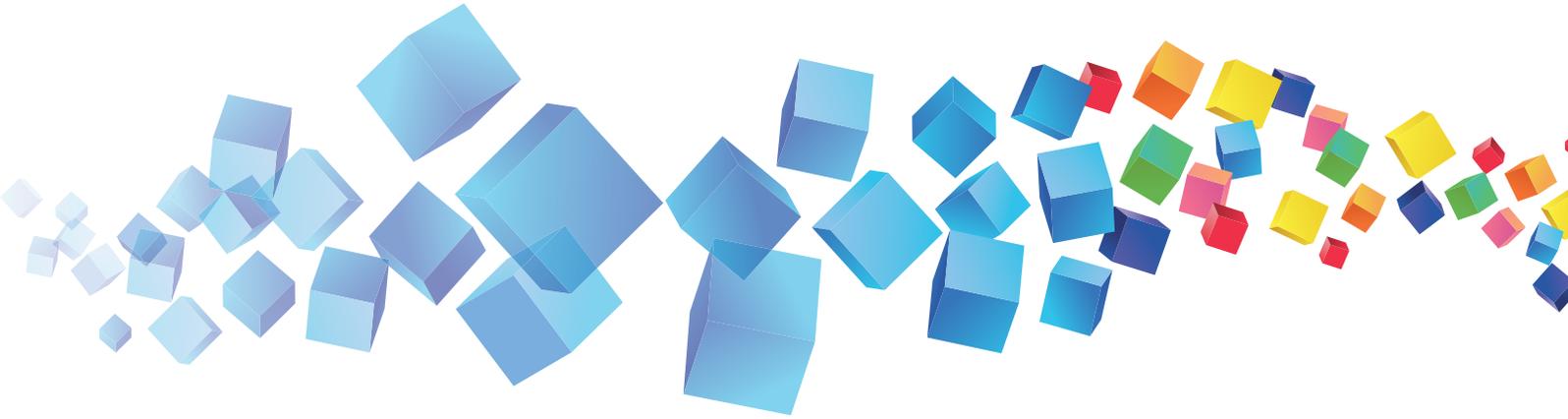
Mapei SpA  
Via Cafiero, 22 – 20158 Milan (Italy)

**1-800-42-MAPEI (1-800-426-2734)**

**www.mapei.com**

Copyright ©2019 by MAPEI Corporation ("MAPEI") and all rights are reserved. MAPEI does not guarantee or warrant the accuracy or completeness of this publication. Nor does MAPEI assume any responsibility arising from the reader's reliance on the information in this publication. MAPEI denies all liability for damages of any kind arising from any errors, omissions or inaccuracies in this publication, or resulting from any reader's reliance on this publication. Therefore, MAPEI disclaims all express and implied warranties, including, but not limited to the implied warranties of MERCHANTABILITY and FITNESS FOR A PARTICULAR PURPOSE. All intellectual property rights and other information contained in this publication are the exclusive property of MAPEI (or its parent or related companies), unless otherwise noted. No part of this publication may be reproduced or transmitted in any form without the prior written consent of MAPEI.

NOTE: The electronic version of this publication is found on MAPEI's website at [www.mapei.com](http://www.mapei.com) and shall be exclusively governed by that website's terms and conditions of use.



# MORE THAN MORTARS

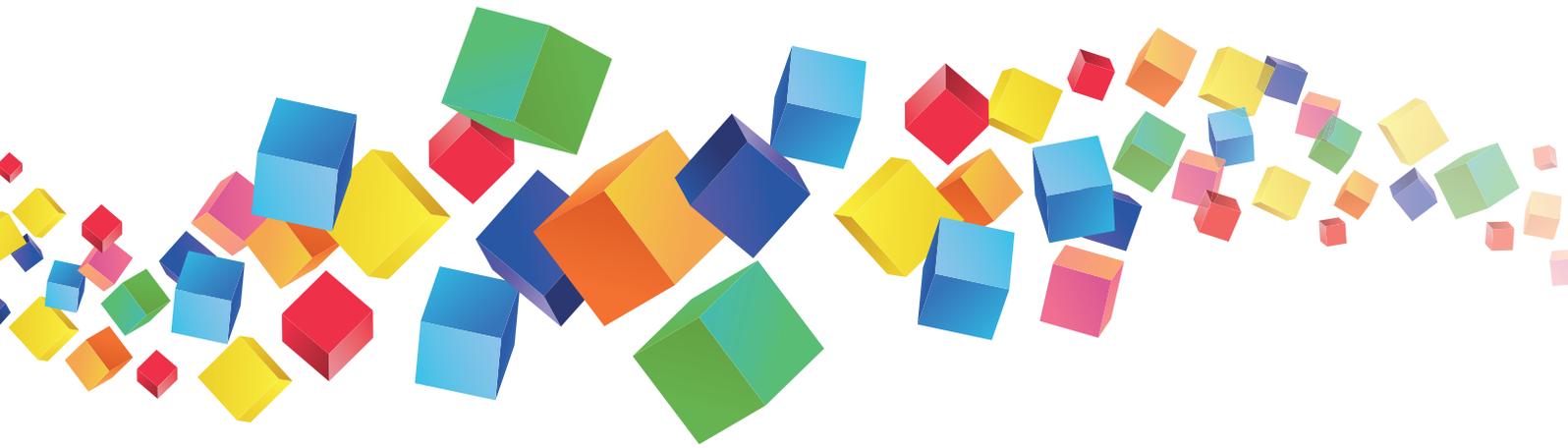
The wide scope of MAPEI's construction solutions might surprise you

**Overview:** With 11 product lines, MAPEI provides best-in-class system solutions for for sports flooring installations, underground construction and the marine industry, as well as offering cement additives and admixtures for concrete.

MAPEI is renowned for its top-selling grouts, mortars and adhesives. In fact, the company is so well-known for its flooring solutions, they can overshadow its other product lines. In addition to Tile and Stone Installation Systems (TSIS) and Floor Covering Installation Systems (FCIS), MAPEI offers Products for Sports Flooring, Concrete Restoration Systems (CRS), Waterproofing Systems, Products for Structural Strengthening, Products for Wood Flooring, Admixtures for Concrete, Products for Underground Construction (UTT), Cement Additives, and Products for the Marine Industry.

While the more familiar TSIS and FCIS lines offer interior and exterior protection for floors (and in some cases, walls), the other lines offer a wide range of protective solutions too.





## PRODUCTS FOR **SPORTS FLOORING**

An exciting case study for this line can be found in this issue on pages 36-38. The installation of **Mapesoil™ 100** and **Ultrabond® Turf PU 1K** at a Topgolf facility in Texas marked an important turning point for this product line in the United States. Not only was this the first large installation of **Mapesoil 100** in the United States (195,800 lbs. or 88 813 kg of **Mapesoil 100** applied over 168,000 sq. ft. or 15 608 m<sup>2</sup>), but also it was the most unusual thus far with the substrate's undulations mimicking the hills and fairways of a golf course. In addition to synthetic turf and products for soil stabilization, this line also includes products for rubber sports flooring, such as for tennis and basketball courts.



## **CONCRETE RESTORATION SYSTEMS**

Pages 9-11 provide an award-winning CRS project reference. The renovation of the high-traffic flooring at the Canadian Science and Technology Museum in Ontario was such a success that it won the award for Public Buildings and Urban Design in MAPEI's internal International Reference Projects Grand Prix. But the CRS line provides more than the concrete repair products used in this project. Interacting with state Departments of Transportation (DOTs) and facility managers alike, this product line spans a full spectrum of solutions – from bridges to stadiums to public facilities like museums. This line also offers coatings and sealers, decorative toppings, waterproofing systems, structural strengthening systems, and admixtures for concrete among other product solutions.





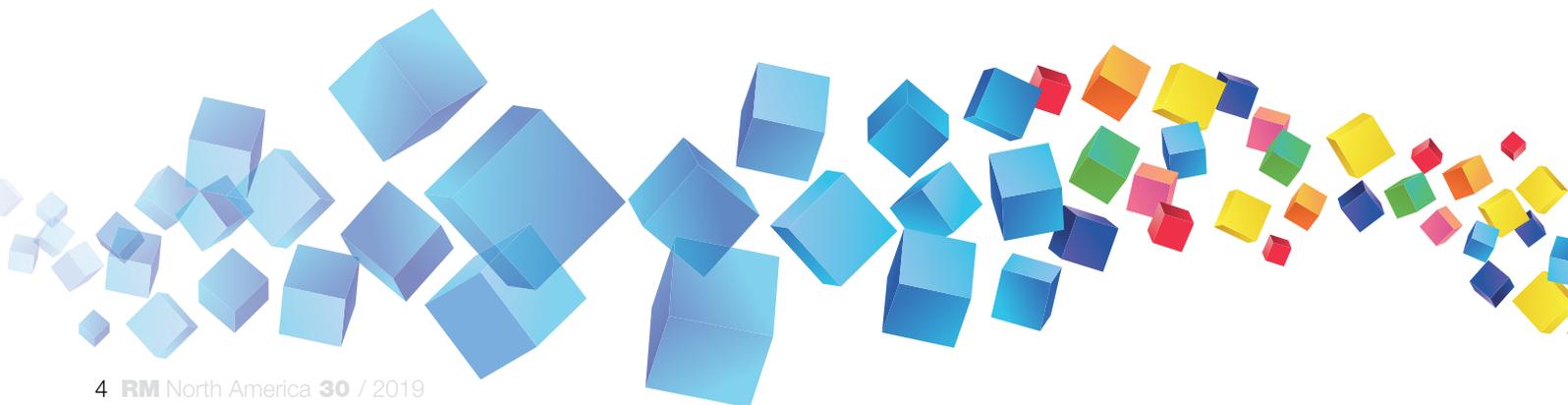
## WATERPROOFING SYSTEMS

MAPEI offers a wide variety of waterproofing systems including bentonite clay membranes and self-adhering sheet membranes. The newest addition to its waterproofing product line is an exciting one: **Planiseal® CR1** cold-fluid-applied waterproofing membrane. Fast-curing, single-component and 100%-solids, this membrane is applied like a coating and contains virtually no VOCs. This means that, unlike many waterproofing systems, **Planiseal CR1** can be applied in and around occupied spaces.



## PRODUCTS FOR STRUCTURAL STRENGTHENING

In addition to the **Elastocolor®** coatings line that was featured in *Realtà MAPEI North America* (Issue 29) as lending customized aesthetic beauty to the famed Philadelphia Metropolitan Opera House, MAPEI's Products for Structural Strengthening line offers several products to provide varying degrees of structural strength. There are epoxy adhesives, concrete repair mortars, laminate wraps, glass fiber wraps and carbon fiber wraps – all of which can be custom-engineered by MAPEI to meet specific job requirements. For example, MAPEI's fiber-reinforced polymer (FRP) products were specified in combination with CRS products to preserve the substantially corroded JEA Northside Generating Station bridge in Jacksonville, FL.





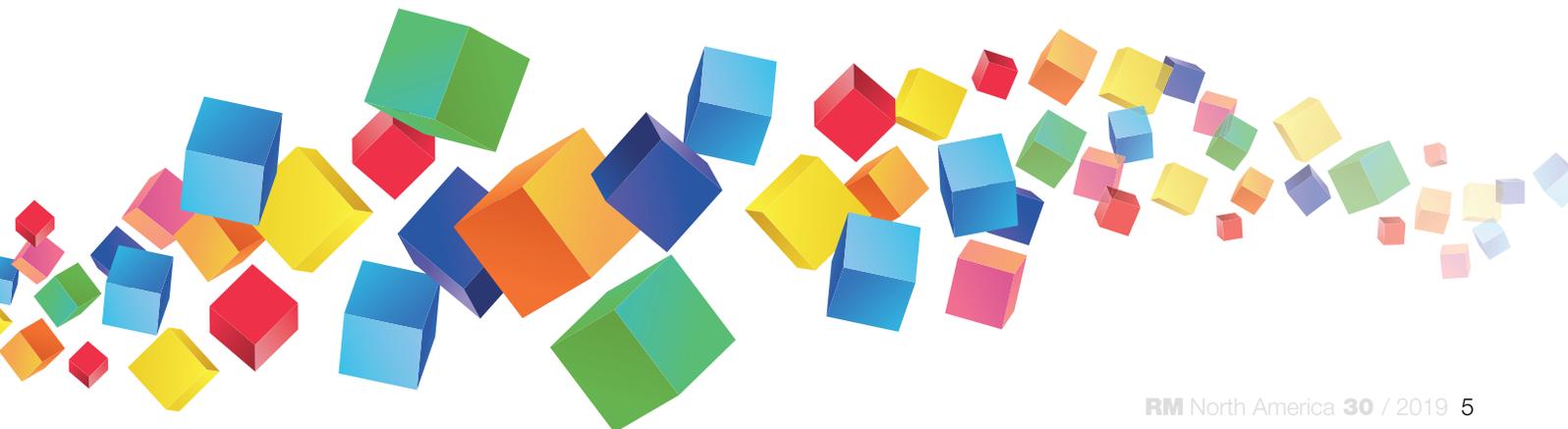
## ADMIXTURES FOR CONCRETE

MAPEI's admixtures line offers industry-leading products including water reducers, retarders, accelerators, superplasticizers, shrinkage reducers, corrosion inhibitors, viscosity-modifying agents, fiber reinforcement and air-entraining agents. When added to concrete, these products play vital roles in accelerating/decreasing curing rates and strengthening the concrete. They are the crucial "secret ingredients" hidden in the midst of the final built results. Examples of projects featuring MAPEI's concrete admixtures? How about U.S. Bank Stadium (the home of the Minnesota Vikings), the concrete bases of a large wind-generation farm in Texas, and a tunnel and runway at Missouri's Lambert Airport, to name a few. For the science behind how admixtures work, turn to pages 26-29.



## PRODUCTS FOR UNDERGROUND CONSTRUCTION (UTT)

This category covers both the products themselves and the team that backs them up. MAPEI is unique in offering underground technology construction products as well as a team of professionals dedicated to understanding the latest underground technology and delivering that skill set to its clients. Not only does MAPEI have a certified shotcrete instructor (see the article "Underground Spirits" in *Realtà MAPEI North America*, Issue 28) on the team, the team also pools its international knowledge base as it did on the "rock crusher" project highlighted in this issue on pages 23-25. Whether it is a tunnel or a mine – from the Rome Metro's C Line running directly past the Colosseum, to the Edmonton Tunnel in Canada, to mines on Texan plains – MAPEI's UTT group and product solutions have provided answers to the most difficult underground problems.





### CEMENT ADDITIVES (C-ADD)

MAPEI's Cement Additives Division provides cutting-edge, sustainable technologies for the cement industry. The line offers grinding aids, pack-set inhibitors, strength enhancers, grinding aids specifically designed for Portland cements, and air-entraining/waterproofing additives for masonry cements. Goals of C-ADD technology include reducing CO<sub>2</sub> and optimizing setting time.



### PRODUCTS FOR THE MARINE INDUSTRY

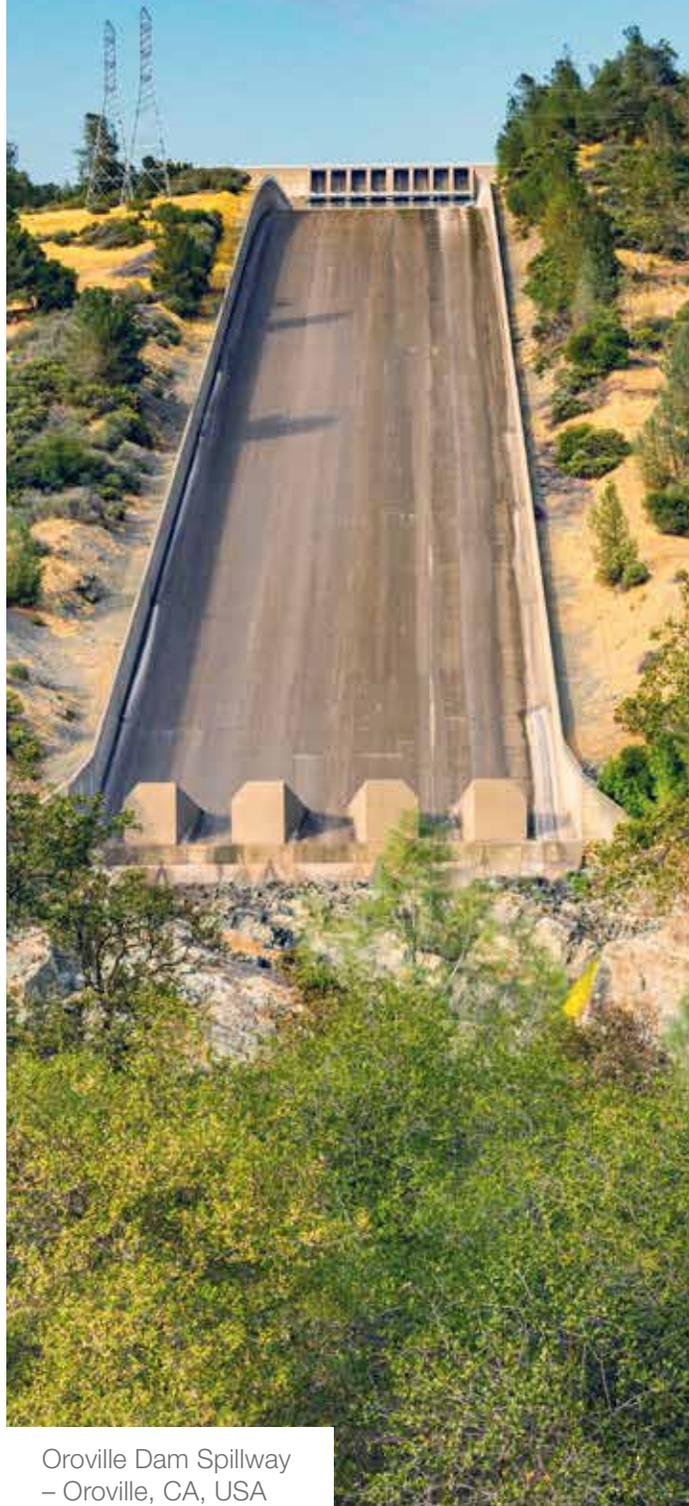
This line conjures up images of a vacation, but the most recent project reference proves that its products must withstand quite a beating (see the article "Ship Rescue" in *Realtà MAPEI North America*, Issue 28). Salt is one of the most corrosive elements, and cruise ships are constantly exposed to it — not only below the waterline, but also above it with salt air and sea spray. Add to this the traffic wear of thousands of passenger feet and the constant food, soda, and alcohol spills. It's clear that the ships themselves — and the products that protect them — must look beautiful while withstanding tremendous abuse. This is the specialty of MAPEI's Products for the Marine Industry, designed for durability, safety, beauty and slip resistance. Some of them even glow. These products help to ensure that those who sail or cruise will have a carefree and corrosion-free vacation.



While MAPEI is proud of its mortars and grouts, it is proud to offer so much more. It isn't far-fetched to say that if there is a challenge, MAPEI has a solution.

# DAM RIGHT

MAPEI helps to strengthen a dam's structure and save a city



Oroville Dam Spillway  
– Oroville, CA, USA



**Overview:** When devastating amounts of erosion were discovered on the Oroville Dam's spillway, thousands of lives were at risk. MAPEI's **Planigrout 755** construction grout was utilized to fill voids in the concrete and strengthen the repaired structure.

The state of California had a massive problem. Decades had passed with public funds being diverted away from infrastructure projects, resulting in deteriorating freeways and roads, rusting bridges and – as the normally drought-ridden state learned during one rainy winter – crumbling dams.

February 2017 was an unusually rainy season, soaking Northern California to saturation and beyond. On February 7, as the water continued to pour down, state engineers noticed concrete erosion on the flood-control spillway at the Oroville Dam.

In operation since 1968, the Oroville Dam is an earth-fill embankment dam located on the Feather River just east of the city of Oroville, California (population 19,895) in Butte County (population 220,400) in the scenic Sierra Nevada foothills. At 770 feet (235 m) high and 6,920 feet (2 109 m) long with a volume of 78,000,000 cubic yards (59 635 279 m<sup>3</sup>), the Oroville Dam is not only the tallest dam in the United States, it is the only thing separating Lake Oroville from the thousands of people living downstream in Oroville.

As additional storms were being predicted, engineers inspected the spillway further and uncovered more erosion. Finally, the California Department of Water Resources stopped the spillway flow and the worst was revealed: The structure was badly damaged and in need of immediate repair.

An emergency spillway was created, and the water flow was diverted to it. Rocks were carried by helicopter to the damage site to help shore up the erosion but, like a scene from a nightmare, the effort was no match for the rising water.

At that point, state officials issued evacuation orders for 200,000 people living downstream. The idea of the dam failing and sending Lake Oroville crashing downhill over everything in its path – including the town of Oroville – was turning into more of a reality. California's massive problem had become a state of emergency.

Heavy equipment and construction workers were called in from around the state. As water continued to pour from the emergency spillway, over 125 crews worked around the clock in an attempt to lower the lake level. Finally, by February 17 (10 days after the erosion was first noticed), the crews were ready to begin pouring concrete – and MAPEI was there to help.



### MAPEI products on the jobsite

“There was one product for this job,” said Rob Dyer, the MAPEI coordinator on the project. “They knew it would work. We knew it would work. And so, there was a lot of *Planigrout 755* delivered to this jobsite.”

The specifications called for the installation of about 8,000 pieces of #10 rebar on the spillway to reinforce the heavily eroded structure. “Each piece of rebar was sized between 15 and 25 feet [4.57 and 7.62 m] in length,” Dyer said. Because *Planigrout 755* is a one-component, nonshrinking, cementitious grout, it was excellent for use as nonshrink grouting for rebar placement.

About 8,000 cores were drilled. Rebar was then placed into the cores. “We pumped the *Planigrout 755* in to fill the voids between the pieces of rebar and the outer wall of the core,” Dyer said. “We used about 16,000 bags of 50-lb. [22.7-kg] product during the entire project.”

Fortunately, Mother Nature cooperated, the rains held off and the water levels in the lake dropped during the repair process. “This minimized the possibility of a dam failure during the quick fix on the damaged spillway and then on the repair/replacement that immediately followed,” Dyer said.

Dyer then summed up the incredible experience. “This was a great project to be a part of. How often do you get the chance to help save an entire town?”

### TECHNICAL DATA

**Oroville Dam Spillway** – Oroville, CA, USA

**Years of original construction:** 1961-1968

**Years of MAPEI involvement:** 2017-2018

**Where MAPEI products were used:**

*Planigrout*® 755 was used to install about 8,000 pieces of #10 rebar.

**Project owner:** California Department of Water Resources

**Original designer:** U.S. Army Corps of Engineers

**MAPEI distributor:** USC Supply, Inc.

**MAPEI coordinator:** Rob Dyer

**Photographer:** Rob Dyer

**Challenges:** The dam had to be reinforced before the rains began again and the water levels in the lake started to rise.

### MAPEI Product

Nonshrinking construction grout for rebar placement: *Planigrout 755*

# HARD SCIENCE

Durable concrete topping rejuvenates a busy science museum's floors



Canadian Science and Technology Museum – Ottawa, ON, Canada



**Overview:** A major renovation was undertaken at the Canadian Science and Technology Museum after museum officials discovered that the building contained mold and asbestos, and had a structurally compromised roof. The renovation work also included the flooring. MAPEI's **Planibond EBA** bonding agent was installed over the old concrete floors to ensure the proper adhesion of MAPEI's **Ultratop PC** polishable concrete topping.

The largest museum of its kind in Canada, the Canadian Science and Technology Museum allows visitors to experience science and technology firsthand with multiple exhibitions, collections, special events, workshops and more. The museum is a popular destination for schools and families alike.

In 2014, the Canadian Science and Technology Museum closed for a three-year-long renovation project when the museum administration discovered that the building contained mold and asbestos – in addition to learning that the roof was structurally compromised. The museum manager described the building as “tired and in need of a reboot.”

The administration turned to general contractor Pomerleau Inc. to fix the issues and bring the museum into the 21st century. Originally opened in 1967, the entire

building was due for renovation, especially because the museum tells the story of Canada's innovation in the realm of science and technology. Instead of facing a bright future, the structure was outdated and in desperate need of attention.

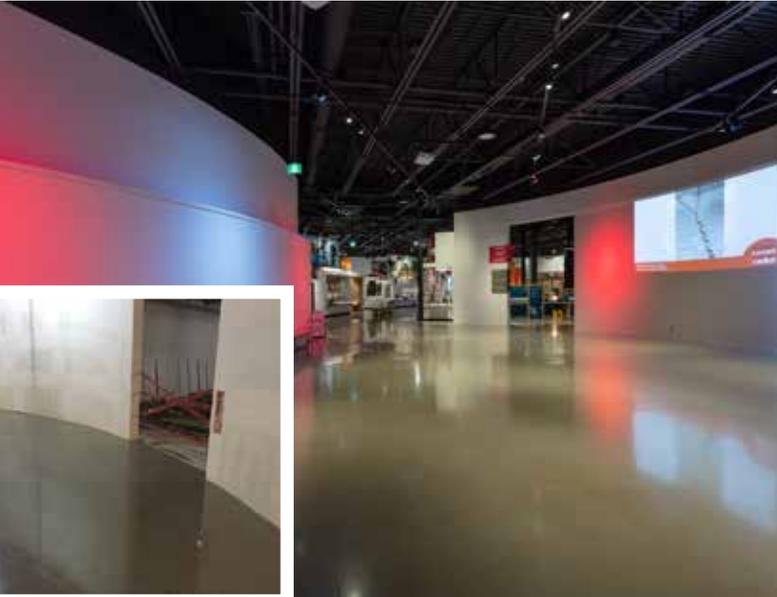
The renovation costing \$80.5 million USD (about CAD \$106 million) included mold and asbestos remediation, transforming the 10-acre (4.05-hectare) front lawn into a park, raising the entranceway roof by 40 feet (12.2 m) and adding a 1,172-square-foot (109-m<sup>2</sup>) canopy along with a 250-foot (76.2-m) facade for

visual projections. The entire space was completely redesigned, combining favorite existing elements with new, high-tech interactive exhibits like "Ingenium," which honors those "who think differently and test the limits of innovation."

Not surprisingly, one of the biggest parts of the job involved rejuvenating the building's 95,000 square feet (8 826 m<sup>2</sup>) of concrete flooring, an area of high-level foot traffic for pedestrians throughout the day. While the flooring itself wasn't in terrible shape, museum officials wanted the new floors to maintain a high-polished, shiny finish despite the constant high volume of foot traffic they endure. So the contractors at Pomerleau Inc. reached out to MAPEI Inc. for innovative products to protect the high-tech museum's concrete floors.

### MAPEI products at work on the jobsite

First, MAPEI's *Planibond EBA* two-component, high-modulus epoxy bonding agent was installed on top of the existing concrete floor. Sand was then hand-broadcast into the wet epoxy to the point of refusal in order to ensure the proper adhesion of MAPEI's *Ultratop PC*. A self-leveling, cementitious topping that is optimized for polishing, *Ultratop PC* was an easy choice to use across the entire 95,000 square feet (8 826 m<sup>2</sup>) of concrete flooring. The extremely dense, hard and durable resurfacing material will enable the museum floors to keep their high-polish shine despite the many feet that walk on them.



## TECHNICAL DATA

**Canadian Science and Technology Museum** – Ottawa, ON, Canada

**Project category:** Public Building – Museum

**Year of original construction:** 1967

**Year of MAPEI involvement:** 2016

**Where MAPEI products were used:** *Planibond*<sup>®</sup> EBA was installed on top of the existing concrete flooring. *Ultratop*<sup>®</sup> PC was installed on top of the *Planibond* EBA.

**Project owner:** Canadian government

**MAPEI distributor:** Réno-Direct

**Architect:** NORR

**General contractor:** Pomerleau Inc.

**Installer:** BTM Construction

**Project manager:** Jean François

**Photographer:** Olivier Gariépy

**MAPEI coordinator:** Justin Lafontaine

**Project size:** 95,000 square feet (8 826 m<sup>2</sup>)

**Challenges:** The floor requires a continued high-polish shine in spite of the high volume of foot traffic.

### MAPEI Products

Self-leveling and bonding: *Planibond* EBA

Polishable concrete topping: *Ultratop* PC



# HORIZONTAL RESURFACING

Repair, replace or resurface?



Kevin O'Connor (at left, on the big screen), host of TV's "This Old House" and MAPEI's booth emcee, discusses concrete resurfacing techniques with Andrew Fulkerson (right), MAPEI's CRS Technical Services Manager, on the stage in the booth at World of Concrete 2019.

Over time, horizontal concrete surfaces suffer surface deterioration due to heavy use, abrasion, ice, salt or age – a common problem for light commercial and residential projects alike. When it comes to concrete surfaces, the most cost-effective way to get a “like-new” look is to simply resurface.

According to Andrew Fulkerson, MAPEI's Concrete Restoration Systems Technical Manager, the two common scenarios eligible for horizontal resurfacing are existing concrete and repaired concrete. Here's why: Once the installer determines that the concrete is only visibly damaged, resurfacing offers a simpler solution opposed to total reconstruction, saving time and money on a jobsite.

Fulkerson said that MAPEI's comprehensive range of products includes solutions for patching, priming, resurfacing and sealing horizontal surfaces.

- **Patching:** For a high-performance concrete patch, MAPEI recommends patching spalled areas with **Mapacem Quickpatch**, a fast-setting, gray cementitious material that can blend naturally with existing concrete.
- **Priming:** Once the patch is applied and cured, installers

follow up with a 3-to-1 mix of water and **Planicrete UA**, a concentrated liquid latex admixture perfect for priming.

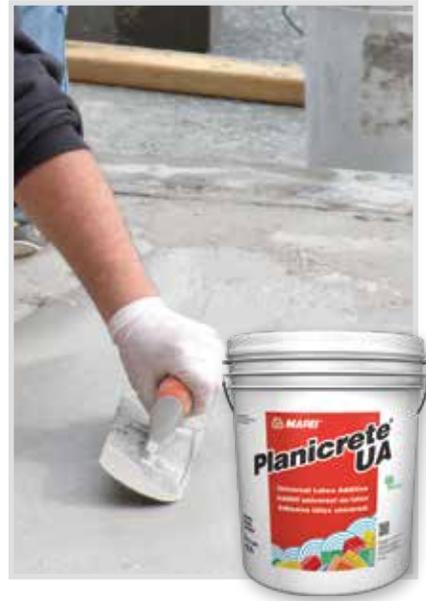
- **Resurfacing:** To disguise and hide repaired areas, **Concrete Renew** can be applied by trowel, broom, plaster pump or hopper gun for a “knock-down finish.” This high-performance concrete resurfacer is also freeze/thaw-stable for use in areas with snow and ice. **Concrete Renew** can be tinted with colorant suitable for concrete and can also be used over stencils that will provide an aesthetic look similar to stamped concrete.
- **Sealing:** Once the second or third application of **Concrete Renew** is installed, it can be sealed with **Mapefinish Wet Look**, a clear, water-based acrylic sealer for all types of concrete.

For instances of disrepair, MAPEI offers a wide range of innovative products for building, restoring and protecting concrete structures at home and around the world. As a systems solution provider, not just a manufacturer of products, MAPEI is the “one-stop shop” for concrete restoration needs.



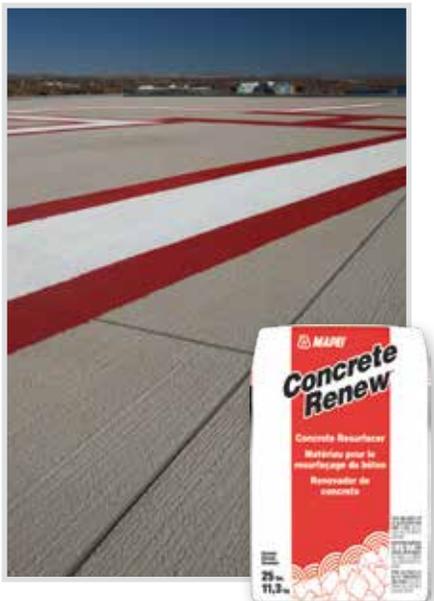
**Mapecem® Quickpatch**  
concrete patch

*Mapecem Quickpatch* is a high-performance, fast-setting, cementitious material used for the patching of concrete surfaces.



**Planicrete® UA**  
latex additive

*Planicrete UA* is a next-generation, water-based, one-component, concentrated liquid latex admixture used to enhance the performance of several MAPEI products, including mortar mixes. Using *Planicrete UA* as part of the designated design mixes will increase product performance in the areas of bond, flexural and tensile strengths in addition to increased durability and enhanced workability. It is also suitable as a primer for concrete repairs and resurfacing.



**Concrete Renew™**  
concrete resurfacer

*Concrete Renew* is a one-component, polymer-modified cementitious material for the resurfacing of existing concrete to provide a like-new look to concrete surfaces.



**Mapefinish™ Wet Look**  
sealer

*Mapefinish Wet Look* is a one-part, water-based, transparent, glossy sealer designed for protecting concrete surfaces – from highly textured stamped concrete to smooth self-leveling toppings.

# MAPESHIELD™ ANODES

Protecting reinforcement rods  
in reinforced concrete from corrosion



Reprinted from *Realtà MAPEI International* magazine, Issue #72.  
*Mapeshield E* is available in North America by special order.

Galvanic cathodic protection is based on the principle of joining two metals together with different natural potential: Carbon steel, which is used to make the reinforcement rods, and zinc in the anodes. When the two metals are joined, the concrete or the repair mortar acts as an electrolyte, and a continuous electrical current is generated that protects the steel from corrosion. The metal with the most negative electric potential oxidizes, thereby protecting the less negative of the two metals, which becomes passivated.

The zinc contained in *Mapeshield* anodes oxidizes over time and is sacrificed in favor of the reinforcement rods inside the concrete, thereby delaying or interrupting the corrosion process and considerably increasing the durability of the structure. Also, thanks to the electric charge in the anodes, they are able to attract chlorides and keep them away from the reinforcement rods, which in turn has a beneficial effect against corrosion.

One aspect that characterizes and increases the effect of *Mapeshield* anodes is the type of electrolyte they are coated with – a material made from conductive acrylic binders and a pH regulator. The electrolyte ensures that the zinc does not become passivated in alkaline surroundings, such as concrete, which would then prevent the anode from correctly functioning. This particular electrolyte also ensures that the efficiency of the anodes remains constant, even in surroundings with very little moisture. The best position for the *Mapeshield* anodes is calculated according to the density of the reinforcement rods, that is, the ratio between the surface area of the steel to be protected and the surface area of the concrete in contact with the pollutant, but also by taking into consideration the geometry of the structure and its exposure to aggressive agents.

*Mapeshield* anodes offer various advantages. They can be used on both new (prevention) and old (protection) structures, and they can



1

- 1:** An example of *Mapeshield I* applied to a new structure.
- 2:** An example of *Mapeshield E* applied to a restored structure.
- 3:** A close-up of how *Mapeshield I* is joined to the reinforcement rods by simply tying it in place with a piece of iron wire.
- 4:** A close-up of how *Mapeshield E* can be connected to the reinforcement rods by welding a piece of threaded galvanized bar to the reinforcement rods.



4



2



3

be placed selectively and precisely, that is, only in the areas of the structure with the highest risk of corrosion. What is more, they do not require maintenance during their normal service life, and they may be monitored during operation by installing a simple control system.

### **Mapeshield I and Mapeshield E anodes**

*Mapeshield I* internal anodes feature a special zinc core, which, for the same volume, increase the protective surface area, a characteristic which, along with the special electrolyte material it is coated with, makes the product efficient as well as durable over time. There are four different types of internal galvanic anodes in various sizes and masses of zinc to guarantee protection for most types of reinforced concrete structures. The anodes are fastened to the metal reinforcement rods that require protection before pouring the concrete or before applying the repair mortar.

*Mapeshield E* is a self-adhesive plate that is applied directly to the surface of the concrete. This type of anode can be applied easily and quickly by simply removing the protective film from the conductive gel and pressing the plate onto the surface of the concrete. The plates are then connected to the reinforcement rods inside the concrete with electrical connections previously attached to the rods.

*Mapeshield* anodes comply with ISO 12696 “Cathodic protection of steel in concrete,” according to the principle of depolarizing the steel reinforcement.



MAPEI's  
**TALL TALES**

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

– MAPEI founder Rodolfo Squinzi



Here's another tale from a book of short stories about projects of historical significance where MAPEI products played a role. These amusing "tall tales" share a whimsical look at MAPEI from some very funny points of view — from Napoleon to the walls of the Guggenheim Museum. In this issue, we take a look at MAPEI's role in the construction of a landmark in Phoenix, AZ – the Financial Plaza Fountains.

## Financial Plaza – Phoenix, AZ

# Fountains of legend

It's one of the few stories connected with Arizona's Valley of the Sun that Native American elders still know and tell their grandchildren. This is a place where the Salt River once flowed and today is the site of a big city that non-Native Americans call Phoenix.

Legend has it that, among the homes and big buildings, in the midst of the elderly enjoying the warmth of the sun and young careerists climbing the corporate ladder, there's a new spring flowing from the ground. There's no end to the water spouting forth – cool, refreshing, clear, sweet. It's a gift of Nature after years of drought and torrid temperatures.

That was the story his grandfather had told him the night before, and Nyol was still mulling it over the next day. Not yet a teenager, he was already lanky with a gait to match – his jeans worn low below the waist and his baseball cap worn reversed. His penetrating gaze bespoke his pride in his Navajo heritage.

Nyol loved his grandfather and tried to honor the tribal traditions taught to him. Nyol was proud to be Navajo, sought to keep their heritage alive, and wanted to hand down their customs and traditions. But he was just as thoroughly American – full of vitality and grit, and wanting to make the world his own.

Musing on his grandfather's tale, Nyol found himself walking by Fiesta Mall, across the street from Mesa Financial Plaza in downtown Phoenix. It wasn't one of his usual haunts. Big money and big business meant there would be few kids like himself there.

Not much fun in that. But Nyol had gone there on an errand. He crossed the street. That's when he saw them. He stood still.

In front of the building were two beautiful fountains. It was obvious that they had just been completed. The construction site hadn't been fully cleared. The colors of the finely glazed tiles reminded him of the colors of his ancestors. Bright, cheerful, strong. All in an instant. The legend of the spring was alive before his eyes.

The water spouted forth. Drawn to the nearest fountain, Nyol bent over and reached for the water. It was cool and tasted sweet. No mistake about it. He ran home and told his grandfather in a torrent of words.

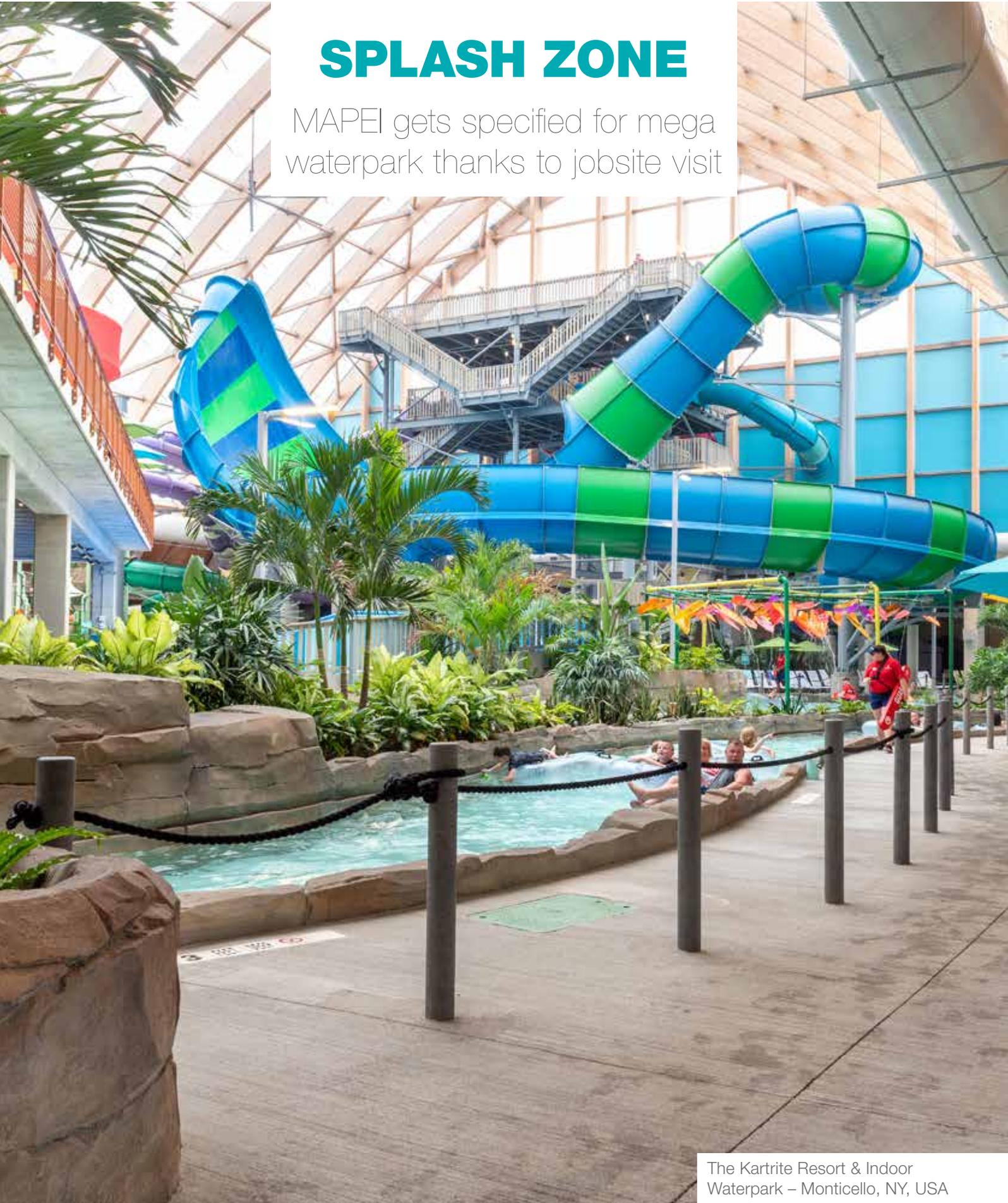
Grandfather Naalnish ("He who works") smiled. "No, Nyol. What you saw were beautiful fountains, not the spring of our story. I know because I was the foreman of the crew that built them. It is really a work of art because we used only MAPEI materials: **Kerabond** and **Isolastic** for installing the porcelain glazed tiles, and **Keracolor** and **Fugolastic** for grouting the tiles."

It wasn't what Nyol wanted to hear. He nodded and left, wordless. What a shame, he thought. Then he stopped a second and wondered, "Why did Grandfather tell me the names of the materials he uses on the job? He's never done that before. Those names he mentioned sounded like Indian words. Grandfather is hiding something... Those fountains are our legend!"



# SPLASH ZONE

MAPEI gets specified for mega waterpark thanks to jobsite visit



The Kartrite Resort & Indoor Waterpark – Monticello, NY, USA

**Overview:** The largest indoor waterpark in New York state as well as 324 rooms in an adjoining all-suite resort feature MAPEI tile/stone installation and waterproofing products throughout. That's because one man followed his instincts and followed up a phone call with an in-person visit. The story of MAPEI's intervention at the Kartrite Resort proves that persistence pays off.

## MAPEI products on the jobsite

As MAPEI sales representative Darin Shocker relates, prior to coming to MAPEI, he used to install tile. "One day, I received a call about a large job asking if I was interested in installing some tile on a 100K-square-foot [9 290 m<sup>2</sup>] project," he said. "I explained that I wasn't installing anymore. And that was that. But the project still was on my mind. I thought that I should go and see if maybe it could be an opportunity for MAPEI. When I arrived at the jobsite trailer, it turned out that MAPEI wasn't even on the specification. Since I was new to the company, I contacted my supervisor, Matt Hess, Sales Director – Northeast Area. We were able to get equal representation on the spec. From that point, BK Tile & Stone, the project's installing contractor, began using MAPEI products on the project."

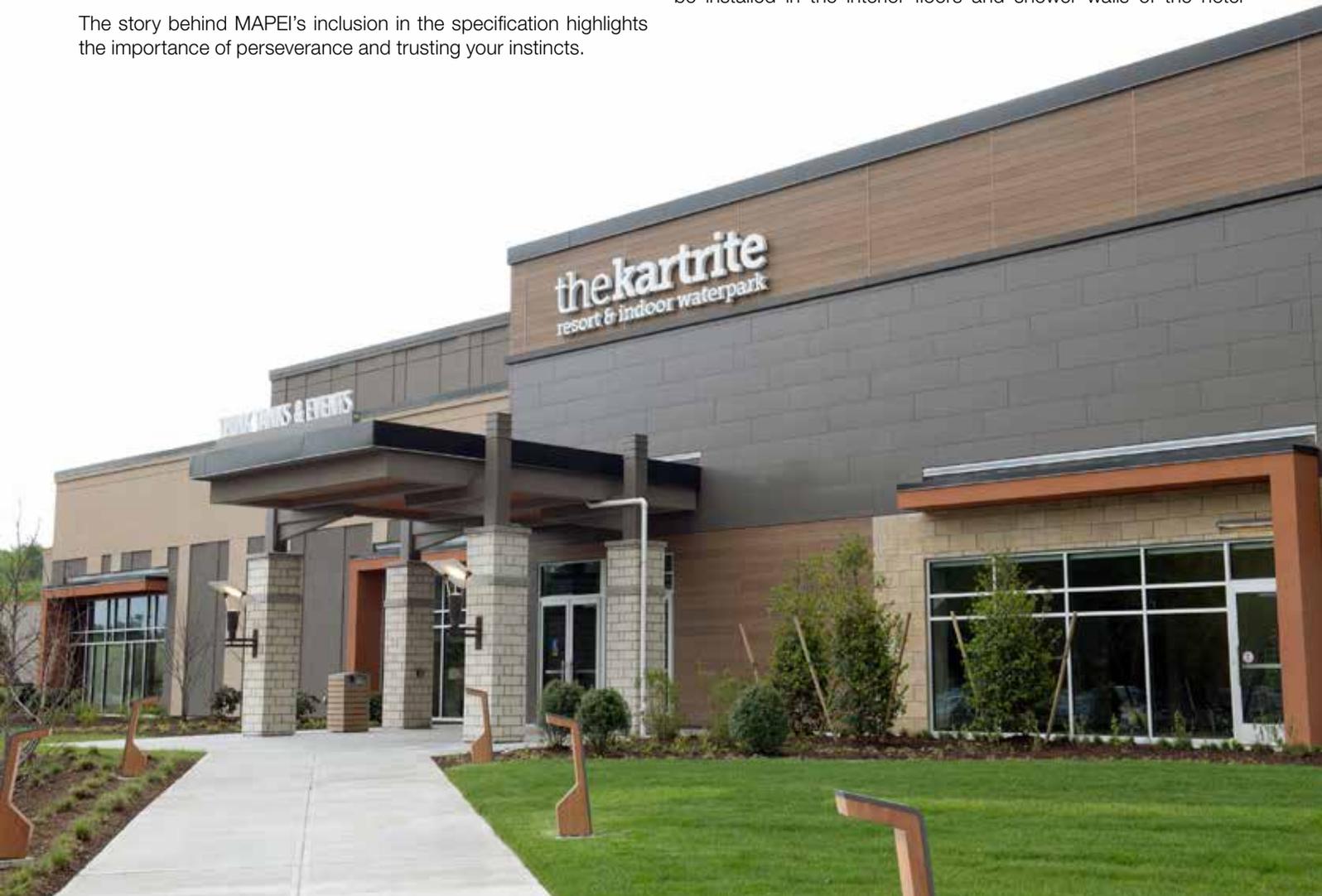
Shocker continued, "They began by using MAPEI products in the hotel bathrooms and foyers. At this point, BK primarily used another manufacturer's products in their installations. But, when they began to use our products on this job, we began to gain their trust. They proceeded to use MAPEI products in all areas of the hotel until eventually this job was 100% MAPEI systems throughout both the hotel and the waterpark."

What were those "or equal" products that Shocker's persistence got included on the spec? The specification called for large quantities of products to be used between the hotel and the waterpark: 430,000 sq. ft. (39 948 m<sup>2</sup>) of self-leveling and waterproofing to be installed in the interior floors and shower walls of the hotel

In New York's Catskill Mountains, an area known for resorts, the Kartrite Resort & Indoor Waterpark is unique. In fact, the Kartrite is unique in the world of resorts in general. Not only is it the largest indoor waterpark in the state of New York, it is one of the largest in the world. According to the resort's Website, the 80,000-square-foot (7 432 m<sup>2</sup>) waterpark features 11 water attractions that have 318,000 gallons (1 203 761 L) of water running through them. Even in the dead of winter, the waterpark is always a balmy 84°F (29°C) thanks to a transparent Texlon roof that allows sunlight to filter in and keeps comfortable heat in as well.

The fun at this state-of-the-art waterpark is included for guests of the Kartrite Resort, the luxury hotel/spa that is attached to the indoor waterpark. The all-suite hotel features 324 rooms with all of the expected high-tech conveniences. The hotel also features a spa, restaurants, shops and a fitness center designed to help fill a weekend or an entire vacation with adventure. And the resort and the waterpark both feature MAPEI products.

The story behind MAPEI's inclusion in the specification highlights the importance of perseverance and trusting your instincts.





and the waterpark (**Novoplan 2**, **ECO Prim Grip**, **Mapesil T** and **Mapelastic AquaDefense**). In addition, the spec required 100,000 sq. ft. (9 290 m<sup>2</sup>) of ceramic/porcelain/quarry installation products (**Ultracolor Plus FA**, **Mapelastic AquaDefense**, **Ultraflex 2**, **MAPEI Ultralite Mortar**, **Ultraflex LFT**, **Kerapoxy CQ**, **ECO Prim Grip** and **Novoplan 2 Plus**). "The hotel has 324 suites with restrooms and kitchens all using MAPEI systems. It also has a large lobby and other foyer areas," Shocker said.

Located in a rural area of Sullivan County, NY, the large-scale commercial construction project required a 15-man crew and a year's work to complete. Shocker explained that whether working on the hotel or the waterpark of this massive project, the BK Tile & Stone crew "trowel-applied the thin-set materials and used rollers and/or spray equipment to apply the waterproofing depending upon the application."

The project ran from July 2018 to January 2019, with the resort and waterpark officially opening on May 10, 2019. "This project uses complete MAPEI systems," Shocker said. "It is also a great example of providing customer service and product deliveries to a remote location. Both the contractor and the owners are happy with the MAPEI experience – people and products. And we have gained a lot of new business as the result of this project. Now, BK is giving our distributors more and more purchase orders since the completion of this job."

But perhaps the main lesson of this project is to trust your instincts and to visit those jobsite trailers. Shocker concurred, "Boy, am I glad I took the ride to check up on the jobsite that day!" Talk about a gamble paying off!

## TECHNICAL DATA

### The Kartrite Resort and Indoor Waterpark – Monticello, NY, USA

**Year of construction:** 2018-2019

**Year of MAPEI involvement:** 2018-2019

#### Where MAPEI products were used:

430,000 sq. ft. (39 948 m<sup>2</sup>) of self-leveling and waterproofing in the hotel and waterpark; and 100,000 sq. ft. (9 290 m<sup>2</sup>) of ceramic, porcelain and quarry tile installation in the hotel and waterpark

**Project owner:** Adelaar HWP, LLC

**Distributors:** Daltile Albany and ProTile

**Contractor:** Suffolk Construction

**Installer:** BK Tile & Stone Inc.

**Project manager:** Andrew Schoch

**MAPEI coordinator:** Darin Shocker

**Challenges:** Due to the project's remote location, manning the crew and delivering product to the site posed difficulties that had to be considered when planning and managing the project.

#### MAPEI Products

Priming as needed: *ECO Prim Grip™*

Self-leveling as needed: *Novoplan® 2 Plus*

Sealing movement joints: *Mapesil™ T*

Waterproofing interior floors and shower walls: *Mapelastic® AquaDefense*

Installing tile on walls: *Ultraflex™ 2*

Installing tile on floors: *MAPEI Ultralite™ Mortar*

Installing tile on floors: *Ultraflex LFT™*

Grouting quarry tile: *Kerapoxy® CQ*

Grouting all other tiles: *Ultracolor® Plus FA*

# INTERIOR

## LIVING SPACE FLOOR

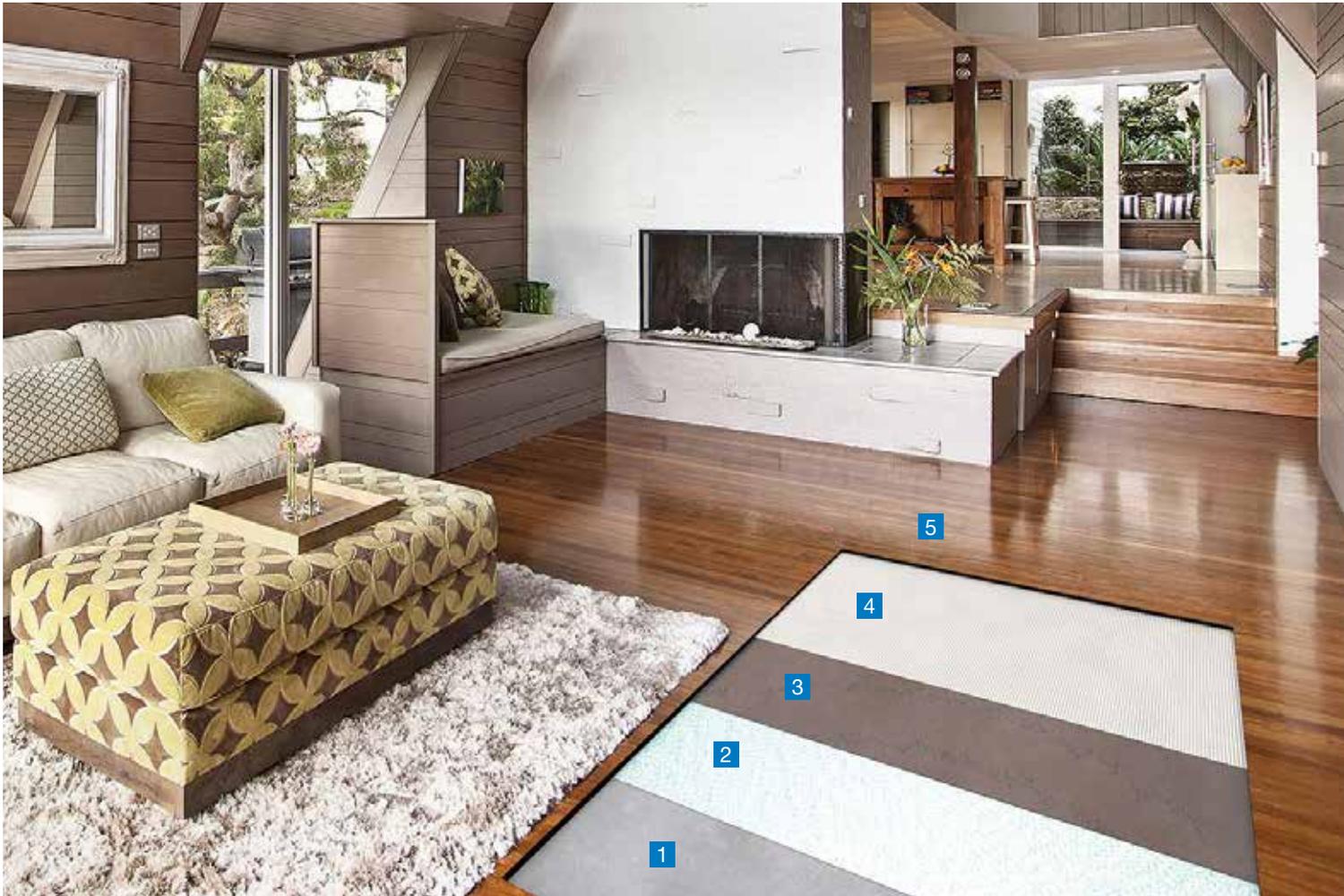
WOOD FLOORING WITH SOUND REDUCTION OVER CONCRETE

- 1 Concrete
- 2 *Primer T™*
- 3 *Ultraplan® Extreme 2*
- 4 *Ultrabond ECO® 985*
- 5 Bamboo flooring, engineered wood flooring or solid wood flooring

Wood can now be considered in many areas, and the choice of how to incorporate it with confidence is easier than ever. From the surface preparation to the finished flooring, MAPEI has it covered.

**Challenges:** Aesthetics; noise transfer; low VOCs; moisture from new concrete

**Solution:** Moisture-resistant, self-leveling underlayment combined with moisture-controlling adhesive that helps with sound reduction



## Ultraplan® Extreme 2

### Weather-Resistant, High-Compressive-Strength, Self-Leveling Underlayment

Ultraplan Extreme 2 is an advanced, hydraulic-cement-based, self-leveling compound designed for fast-track underlayment applications. It is especially formulated for leveling interior, horizontal concrete surfaces where environmental controls are not operational or the building is not enclosed.

#### Features and Benefits

- Moisture- and freeze/thaw-resistant when cured
- Can be placed before HVAC systems or interior finishes are installed
- High compressive strength for extreme durability during construction
- Reduces subfloor preparation time for floor-covering applications

#### Uses

- For use under moisture-controlling adhesive systems and epoxy moisture-control barriers
- For leveling, smoothing and repairing of interior, residential or commercial floors before the installation of flooring systems and coverings
- Interior, residential applications (such as rental apartments, condominiums and homes)
- Interior, commercial applications (such as office buildings, hotel rooms/hallways, restaurants and cafeterias)
- Interior, heavy-commercial applications (such as hotel lobbies, convention centers, airports, shopping malls, grocery stores and department stores)
- Interior, institutional applications (such as hospitals, schools, universities, libraries and government buildings)

See full product details at [www.mapei.com](http://www.mapei.com).



#### Product Performance Properties at 73°F (23°C) and 50% RH

Laboratory Tests	Results
Cured density	128 lbs. per cu. ft. (2.06 kg per L)
pH (of wet mixture)	11
VOCs (Rule #1168 of California's SCAQMD)	0 g per L
VOCs (Section 01350 of California's CDPH)	Passed
Compressive strength – ASTM C-109 Modified	
28 days	> 5,600 psi (38.6 MPa)
Flexural strength – ASTM C348 (CAN/CSA-A23.2-8C)	
28 days	≥ 1,160 psi (8 MPa)

#### Application Properties

Application temperature range	50°F to 85°F (10°C to 29°C)
Mixing ratio	4.4 to 4.6 U.S. qts. (4.16 to 4.35 L) of water per 50 lbs. (22.7 kg) of powder
Flow time	Up to 15 minutes
Single-lift application range	1/8" to 1" (3 mm to 2.5 cm)
Minimum thickness over highest point in floor	1/8" (3 mm)
Waiting time for secondary applications	24 hours
Drying time before installation of non-moisture-sensitive floor coverings at 70°F (21°C) at 1" (2.5 cm) thickness*	3 hours
Drying time before installation of moisture-sensitive floor coverings at 70°F (21°C) at 1" (2.5 cm) thickness*	24 to 36 hours
Time required before exposure to freezing temperatures	3 days

\* Note that shorter drying times may be obtained at thinner application levels.

#### Approximate Coverage\*\* per 50 lbs. (22.7 kg)

Thickness	Coverage
1/8" (3 mm)	48 sq. ft. (4.46 m <sup>2</sup> )
1/4" (6 mm)	24 sq. ft. (2.23 m <sup>2</sup> )
1/2" (12 mm)	12 sq. ft. (1.11 m <sup>2</sup> )
3/4" (19 mm)	8 sq. ft. (0.83 m <sup>2</sup> )
1" (2.5 cm)	6 sq. ft. (0.56 m <sup>2</sup> )

\*\* Coverage shown is for estimating purposes only. Actual jobsite coverage may vary according to substrate conditions, type of equipment, thickness applied, and application methods used.

#### CSI Division Classification

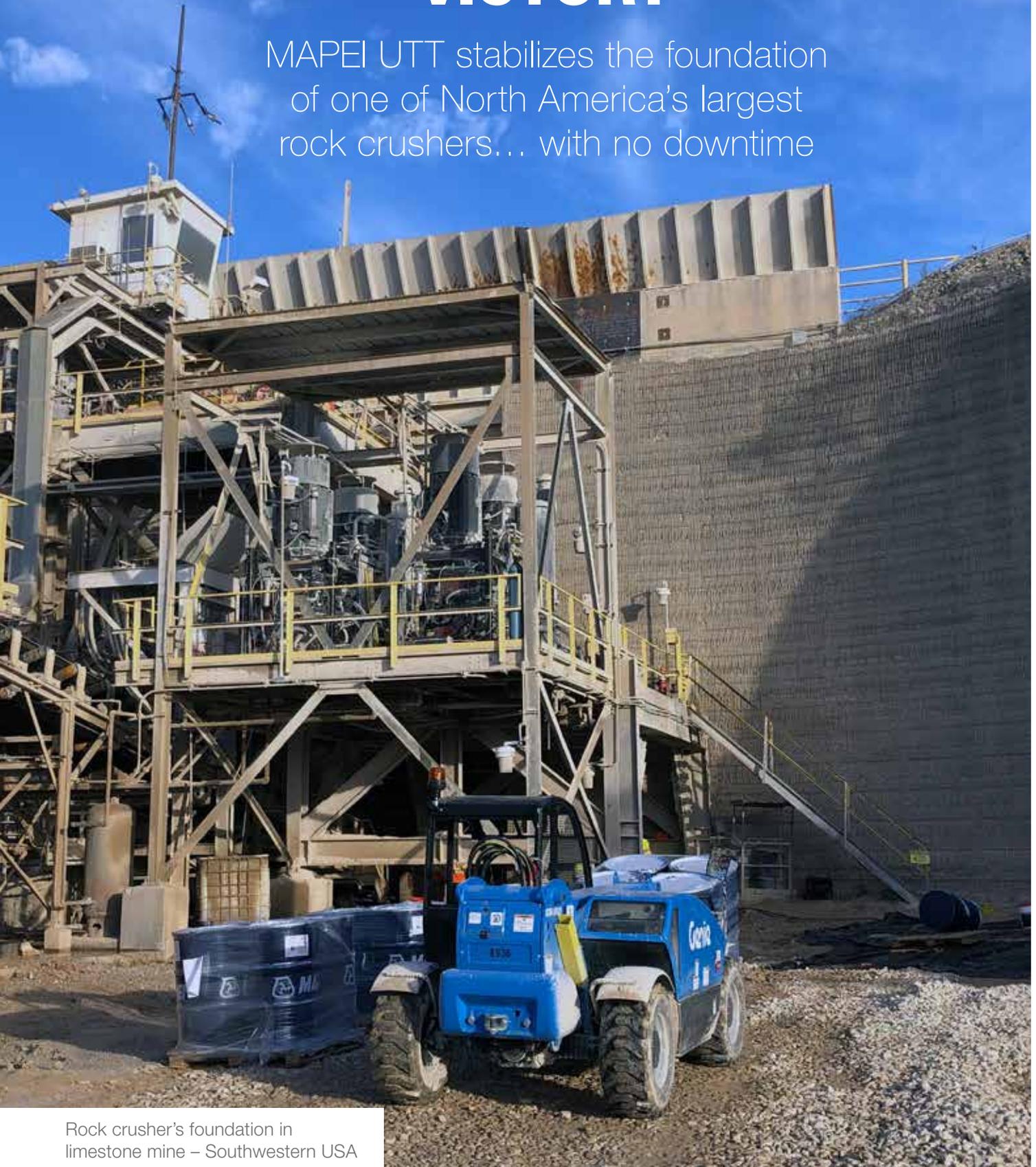
Cast Underlayment	03 54 00
-------------------	----------

#### Packaging

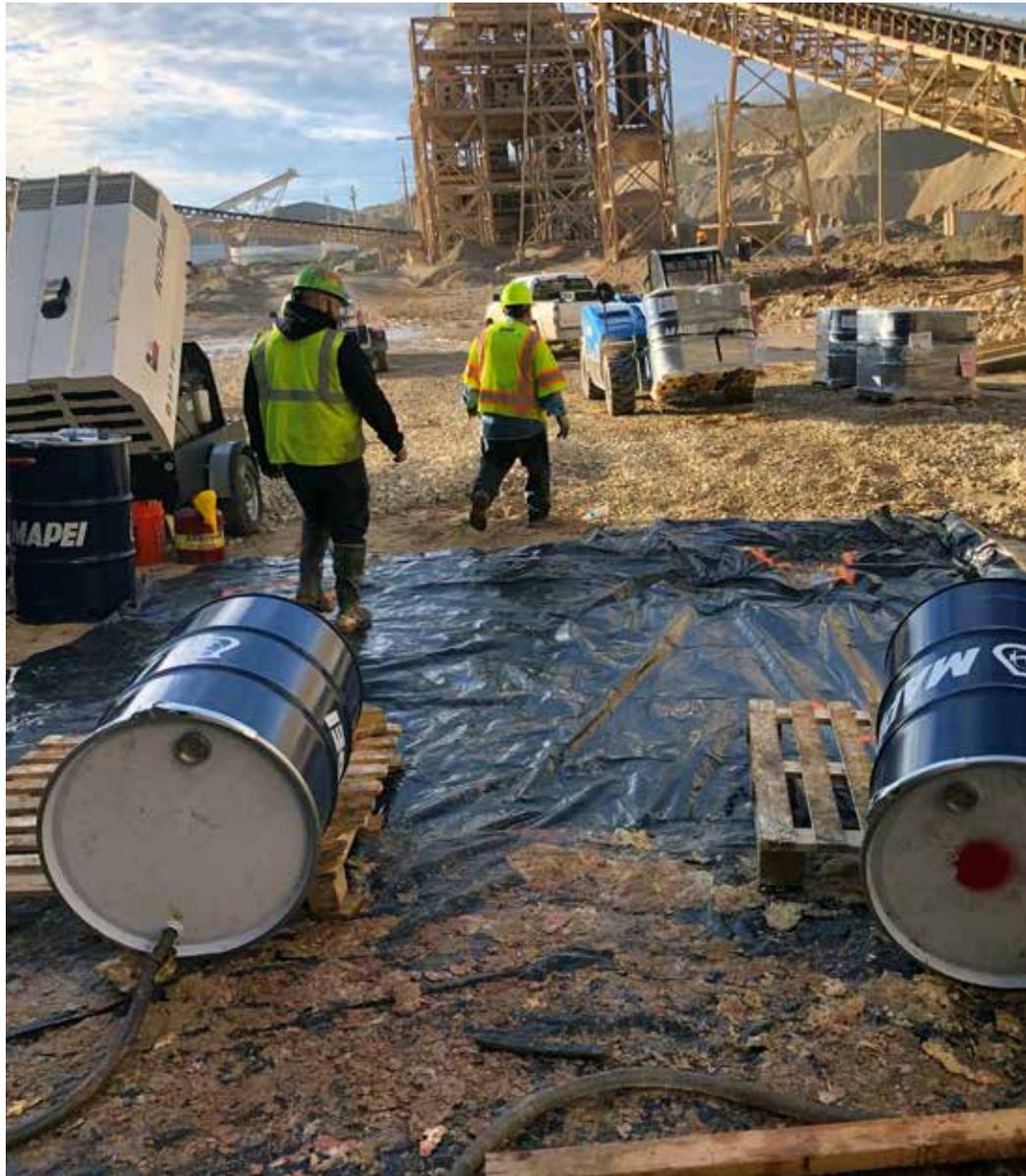
Size
Plastic bag: 50 lbs. (22.7 kg)

# A CRUSHING VICTORY

MAPEI UTT stabilizes the foundation of one of North America's largest rock crushers... with no downtime



Rock crusher's foundation in limestone mine – Southwestern USA



**Overview:** When the ground beneath one of North America's largest rock-crushing machines started to erode, the owners turned to MAPEI's Underground Technology Team (UTT) for help. UTT products (**Silicajet EXP** and **Foamjet F**) as well as expertise and availability of UTT team members quickly and efficiently solved the problem, saving time and money.

When the ground beneath a major aggregate-producing company's largest rock crusher started to erode, a real problem loomed. The crusher sits upon a man-made foundation composed of crushed rock, sand and soil, all held in place with corrosion-resistant wire mesh. More than 50 years of vibrations and general wear had created large voids in the foundation, which measures approximately

50 feet (15.2 m) deep and 150 by 300 feet (45.7 by 91.4 m) wide. The voids had to be filled to prevent further deterioration of the foundation and the ultimate collapse of the machine itself.

Taking the crusher out of operation – either by collapse or forced stoppage – was not an option. Not only would it affect aggregate output, it could also reduce production at the entire facility by 66 percent for many months. And a product loss of this magnitude could not be allowed to occur. The lost revenue would run in the tens of millions of dollars. So the mine's owners turned to MAPEI's UTT group for help.

### MAPEI products on the jobsite

Assessing the situation, the MAPEI UTT professionals quickly realized that in order to stabilize the foundation and consolidate the

existing soil into a compact and supportive base, they would have to act quickly. Two products were chosen to complete the task: *Silicajet EXP*, a lightweight but cost-effective void filler, and *Foamjet F*, which is a stronger and more robust foaming resin, with higher technical properties and stronger stabilization behavior. This combination of materials allowed for optimum cost control and overall performance.

With the use of a two-component, high-pressure pump, the MAPEI UTT products were injected into the strata to stabilize the foundation, fill the voids and stop the erosion.

The installing crew worked every night from 4 p.m. to 4 a.m. for about 2 weeks until all of the voids were filled, and the soil was stabilized. With work taking place on the "night shift," the mine was able to remain in operation. Working on the night shift was also a large selling factor for



### Product Focus

*Foamjet F* is an ultra rapid-setting, high-fluidity, two-component, polyurethane injection resin for consolidating and waterproofing various substrates.



MAPEI UTT in a highly competitive market. MAPEI UTT's on-site support and late-night availability by phone made a huge difference in the customer's selection of materials, although other solutions were available in the competitive mining industry.

Ultimately, the project consumed in excess of \$285,000 of material in less than two weeks, a figure that represents a huge savings in relation to the millions that the company stood to lose had there been a collapse or a shutdown of the rock crusher. MAPEI UTT helped the mine efficiently

and effectively repair a half-century's worth of damage in a matter of days without losing production or equipment.

## TECHNICAL DATA

**Rock crusher's foundation in limestone mine** – Southwestern USA

**Year of original construction:** 1964

**Year of MAPEI involvement:** 2019

**Where MAPEI products were used:** UTT products were used to stabilize the foundation underneath the rock crusher, filling the voids and stopping the erosion.

**General contractor:** Tri-State Waterstoppers, LLC

**Installer company:** Green Orange Construction Pro, LLC

**Project manager:** Green Orange Construction Pro, LLC

**MAPEI coordinator:** Haydn Whittam

**Challenges:** The crusher needed to remain in operation, which required installation crews to work the "night shift" without interrupting production, saving time and money.

## MAPEI Products

*Silicajet EXP*

*Foamjet F*

# CONCRETE'S FUTURE, PART 1

With *Re-Con Zero™ Evo*, concrete becomes reusable and sustainable

Reprinted from *Realtà MAPEI International* magazine, Issue #72.  
This article is by Giorgio Ferrari and Amilcare Collina of Mapei S.p.A.'s Research & Development division.

Thirteen billion cubic meters of concrete are produced every year around the globe, the equivalent of around thirty billion tons or almost four tons per year for each inhabitant of the planet. This material owes its enormous success to its excellent characteristics and properties: Cost-effectiveness, the wide availability of raw materials, excellent mechanical properties and durability. Each and every day, in every corner of the planet, hundreds of thousands of trucks transport fresh concrete from mixing plants to building sites to be used in the construction of every possible type of building and infrastructure.

Not all the concrete that is produced, however, is actually used on site. A certain amount, from just a few hundred liters to several cubic meters, is returned to the mixing plant in its original state as what is known as “leftover” or returned concrete. For various reasons, the production of returned concrete is unavoidable and, as such, has to be considered as an integral part of the production process. According to estimates, returned concrete accounts for around 3% of the total amount produced, or around 900 million tons per year at a global level.

Only a fraction of all returned concrete may be reused as is in concrete works, while for the most part, due to the lack of a viable possibility of using it again and transforming it, it has to be disposed of. For this reason, returned concrete is by far the most abundant waste product at the concrete batching plants. Disposing of returned concrete in landfill sites has a heavy impact on the environment, which may be expressed in terms of “equivalent” CO<sub>2</sub>, the gas responsible for global warming. In numerical terms, one cubic meter of returned concrete sent for landfill is the equivalent of 267 kg of CO<sub>2</sub>, which, if multiplied by the amount of returned concrete produced annually in the world, amounts to almost 105 million tons of CO<sub>2</sub>, the same amount produced in one year by around 47 million medium-sized cars, more than the cars currently in use in Germany.

## From waste to resource

Today, with *Re-Con Zero Evo*, MAPEI's product for more sustainable concrete, it is possible to recover and transform returned concrete, thereby going from a “linear” economic model, based on the production of waste, to a more “circular” economic

model in which waste no longer exists but rather becomes a resource. A circular economy is a regenerative type of industrial system. It replaces the “end of life” concept with a concept of “restoration,” prevents the depletion and decline of natural resources, encourages the use of renewable energy, eliminates the use of toxic chemical substances that impede its reuse/return to the biosphere and aims at eliminating waste by improving the design of materials, products, systems and business models.

But how is it possible to transform concrete from waste material into a resource with *Re-Con Zero Evo*? When *Re-Con Zero Evo* is added to returned concrete in a mixer truck, or in any other suitable mixing system, in the space of just a few minutes the special additives contained in the product absorb any free water that is present, thereby “drying” the concrete. This transforms it into aggregates with a grain size distribution and mechanical characteristics that are perfectly suitable to be reused to make new concrete without generating any new waste – liquid or solid.

The advantages of this innovative product are clear: The production of aggregates





from returned concrete enables the acquisition of natural aggregates to be reduced by a corresponding amount, which in turn limits the depletion of raw materials. The process also completely eliminates the use of landfill sites, which in turn further reduces the impact on the environment. With *Re-Con Zero Evo*, one cubic meter of returned concrete produces only 6.75 kg of CO<sub>2</sub>, almost 40 times less than when compared with disposing of it as landfill. Apart from these environmental benefits, there are also corresponding advantages associated with its use for the entire industrial system: A significant reduction in costs for production, the acquisition of raw materials and the disposal of waste.

Today, thanks to *Re-Con Zero Evo*, there is now the certainty that all returned concrete can be recovered and reused, by means of a process of industrial transformation based on the principles of a circular economy, to produce aggregates with all the technical and environmental requirements for its correct use in the production of concrete and in other civil engineering works.

- 1:** Approximately 400 million m<sup>3</sup> of returned concrete requires treatment every year.
- 2 and 3:** After being mixed for a few minutes with *Re-Con Zero Evo*, concrete is transformed into granular material that, once cured, may be used as aggregate in concrete.
- 4 and 5:** After the material is discharged, the mixing drum is left clean. The cleaning water for the mixer drum may be completely recycled and used again for mixing.

## SUSTAINABLE RECOVERY OF RETURNED CONCRETE

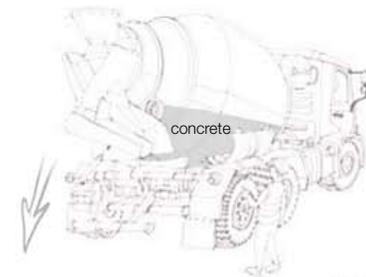
### RE-CONZERO EVO



**1** **1<sup>ST</sup> STEP**  
Component B  
1.5 kg/m<sup>3</sup>  
Mix for 3 minutes



**2** **2<sup>ND</sup> STEP**  
Component A  
0.5 kg/m<sup>3</sup>  
Mix for 4 minutes



**DISCHARGE**



**3** **3<sup>RD</sup> STEP**

Complete kit to treat 1 cubic meter of returned concrete:  
**RE-CON ZERO EVO** Comp. B: 1x1.5 kg water-soluble bags  
**RE-CON ZERO EVO** Comp. A: 1x0.5 kg water-soluble bags



# CONCRETE'S FUTURE, PART 2

## How admixtures can address the shortage of raw materials

Reprinted from *Realtà MAPEI International* magazine, Issue #72. This question-and-answer session with David Sedan, Concrete Admixtures Technical Manager for MAPEI France, focuses on the international admixtures market.



**David Sedan**, Concrete Admixtures Technical Manager, MAPEI France

**Q: What is the definition of an admixture?**

**A:** According to current standards (such as the French standard NF EN934-2 and the European standard CE EN 934-2), “An admixture for concrete, mortar and slurry is a material added to a concrete or mortar mix during the preparation phase at a rate of up to 5% by weight of the cement to modify the properties of the mix in the wet and/or hardened state.” In simple terms, an admixture is an “ingredient” added to the other components of a mix in order to modify and control certain final characteristics of concrete or mortar.

**Q: What are the various families of admixtures and how many are there?**

**A:** There are various families of admixtures and they are defined on the basis of their primary function, although they may also have one or more secondary functions. There are seven main families divided into three groups:

- Admixtures used to modify the rheological properties of concrete
  - Plasticizers and water-reducing agents
  - Superplasticizers and highly effective water-reducing agents
- Admixtures to modify setting and hardening rates
  - Set accelerators
  - Hardening accelerators
  - Set retarders
- Other categories of admixtures
  - Water-repellant admixtures
  - Air-entraining agents

**Q: Are there any other products that can modify the properties of concrete?**

**A:** Actually, there are other products – which are not considered as admixtures according to NF EN 934-2 standard – that can modify the intrinsic or aesthetic properties of concrete.

Among these products, we could mention structural fibers that are used to improve compressive or flexural strength, microfibers as a substitute for anti-cracking mesh, viscosity-modifying admixtures, colloids that are used for concrete to be cast under water and/or concrete subjected to segregation during placing, shrinkage-reducing agents, foaming agents, and pigments for concrete.

And let’s not forget admixtures used for underground work, such as liquid retarders with a stabilizing and plasticizing effect for cementitious injection systems, as well as accelerators for shotcrete.

**Q: Can you give us a few examples of how admixtures are used in industry?**

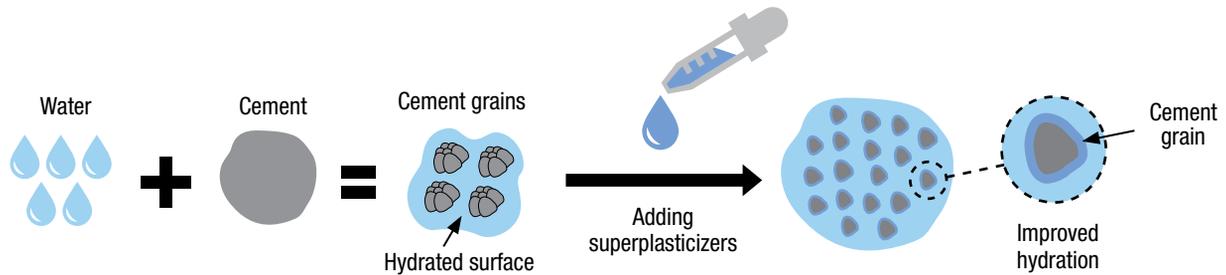
**A:** Let’s use the examples of deep foundations or pre-cast concrete walls, for which it is necessary to work in operating conditions for more than six hours with a high reduction of water. In this case, it is very important to use one of the latest generation of plasticizers, or even a synergic combination between a superplasticizer and a set retarder. For instance, DYNAMON EASY 70 and DYNAMON EASY 74 allow you to achieve excellent results with just a single admixture, depending on the type of cement used.

**Q: What does the future hold for the development of admixtures?**

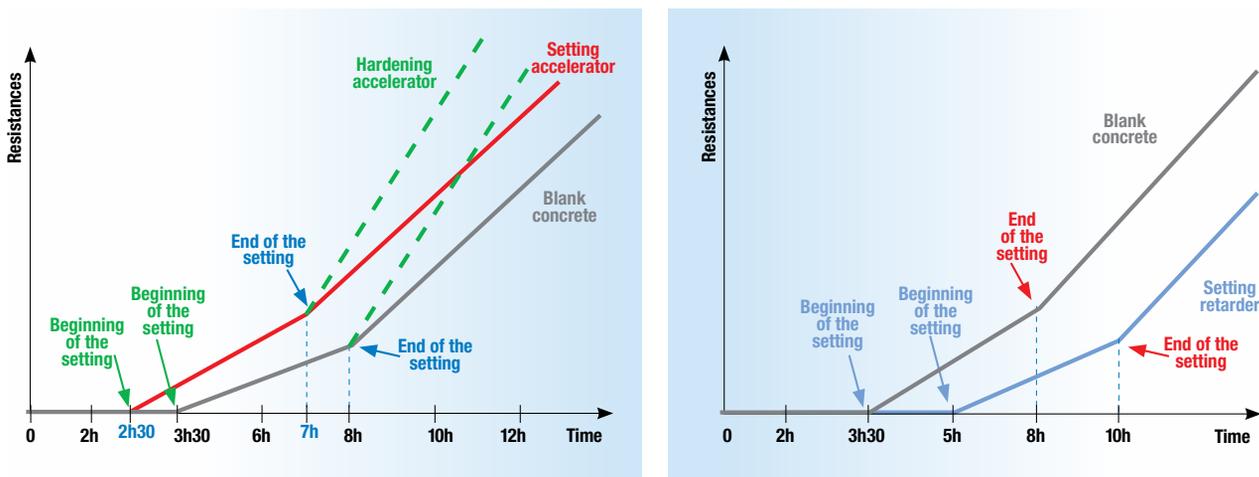
**A:** We are concentrating more and more on the development of admixtures that allow you to formulate concrete using materials normally defined as difficult, such as sand with high clay or even recycled content. In fact, the scarcity of raw materials is a problem that lies at the heart of research into new admixtures because the materials used to formulate new concrete are, for obvious economic reasons, often sourced locally. This is why research conducted in the lab is looking into the existence and development of alternative mineral admixtures that can be – at least partially – used as a substitute for cement, blast furnace slag, fly ash (which is a by-product of the combustion of coal in power stations) or metakaolin (which is obtained by grinding kaolin and firing it at 750°C).

**Q: Can you explain how admixtures work?**

**A:** Plasticizers and superplasticizers allow the amount of water in concrete to be drastically reduced (water-reducing agents) or considerably improve the consistency of concrete without altering the amount of water or produce these two effects at the same time. Superplasticizers reduce water by a much higher amount than plasticizers and have, therefore, a much more pronounced effect.

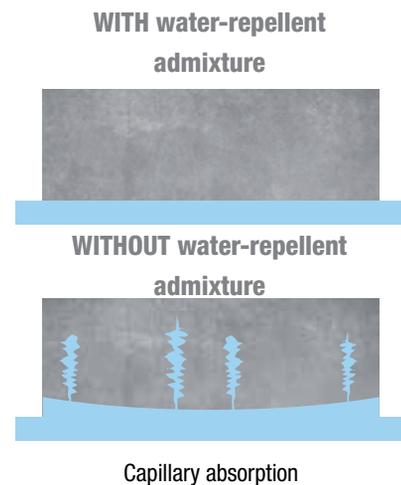
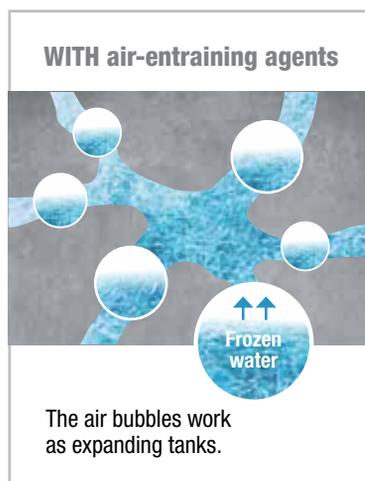
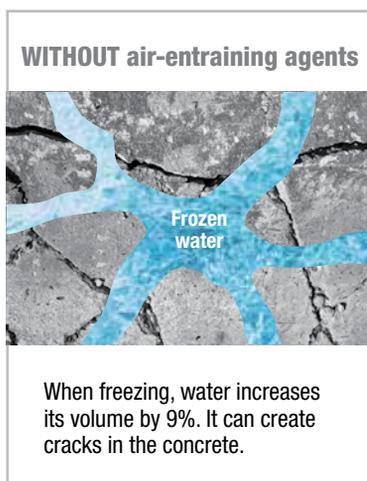


Set accelerators act as catalysts in initial cement hydration reactions, especially at low temperatures, and accelerate the concrete setting (see the graph below, at left). Hardening accelerators improve the early compressive strengths, with or without modifying the setting times. Set retarders delay the moment at which concrete starts to set (see the graph below, at right).



Air-entraining agents create a stable network of microscopic air bubbles in concrete, which improves the durability of concrete exposed to freeze/thaw cycles and the action of de-icing salts.

And lastly, water-repellent admixtures react to form water-repelling particles. These reduce the capillary action within concrete and can reduce the infiltration of water under pressure.



# 2019 TRADE SHOWS

Innovation, education and excellence take center stage



## MAPEI's presence was unmistakable at Coverings 2019

Coverings, the preeminent event for the ceramic tile and natural stone industry in North America, celebrated its 30th anniversary at the Orange County Convention Center in Orlando, FL, on April 9-12. This year's trade show boasted nearly 1,100 exhibitors showcasing 479,788 sq. ft. (44,574 m<sup>2</sup>) of tile and stone, with almost 27,000 attendees from 90 countries. (Fun fact: MAPEI has been attending Coverings since its inception almost three decades ago.)

Even before the show opened, MAPEI was a dominant presence on the Coverings show floor. As booths were being constructed, it was clear that most were being constructed with MAPEI products. Packaging emblazoned with MAPEI's colorful cubes was everywhere.

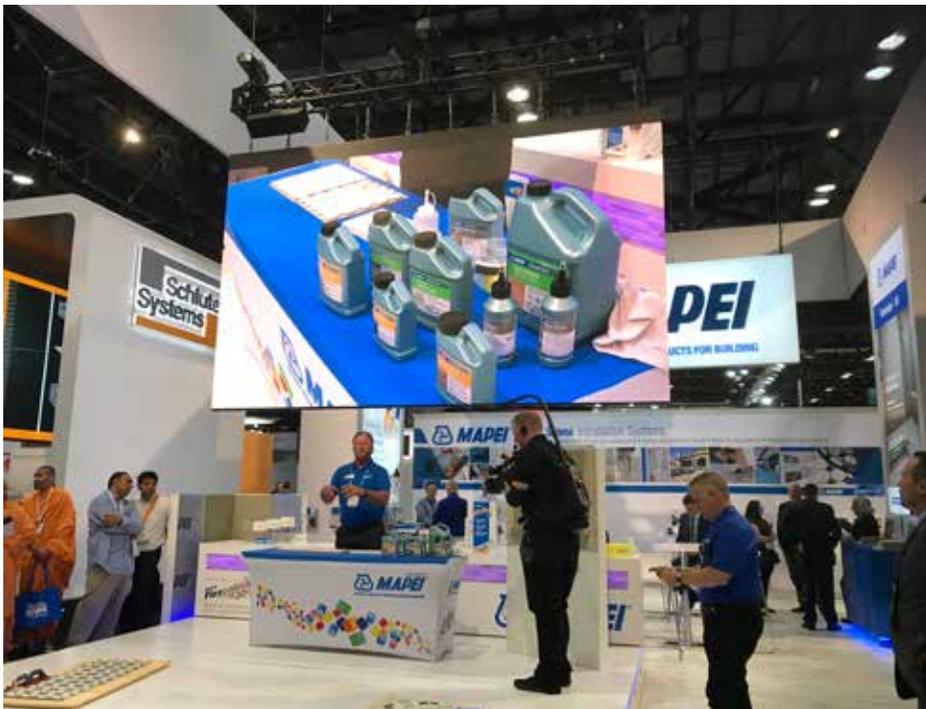
MAPEI continued to assert its unmistakable presence once the show opened. The MAPEI demonstration team and National Technical Presenter Sam Biondo kept crowds informed and entertained, both on the booth's MAPEI *Live!* stage and on the Tile Council of North America (TCNA) demo stage. Demos covered such topics as "From Fast Surface Prep to 'H' Rated Mortars: MAPEI's System Solutions for Large/Heavy Tiles," "Sloping, Waterproofing, Reducing Sound and Installing Large/Heavy Tiles with MAPEI" and "Cement Tiles and Other Scary Situations: MAPEI's Premium System Solutions to Grouting."

In addition, a "Super Demo" combined a plethora of products and installations. Also, Nick Valenti, Business Development Manager for the company's *UltraCare*<sup>™</sup> line of products, demonstrated "MAPEI's

Cement Tile Grouting Solutions, Care and Maintenance." Whether the demos were on the MAPEI *Live!* stage or on the TCNA stage in the middle of the show floor, they were projected onto MAPEI's large video screen. Congregating at the MAPEI booth to watch, crowds spilled out into the aisles.

MAPEI also informed and entertained with educational presentations. Jim Whitfield, MAPEI's Director of Technical Services, co-presented with Crossville Inc.'s Noah Chitty on "Gauged Porcelain Tile and the TCNA Handbook." Brian Pistulka, Product Line Manager for Tile & Stone Installation Systems, presented "QUICKFIRE @ CONNECT: Faster, Better, Cheaper – Pick 2."

The MAPEI booth proved to be a popular stop on the Contractor Tour. Wearing



Ciot's Kristina Panzera was awarded the North American Distributor Award by Confindustria Ceramica during Coverings 2019.

### Special recognition

Kristina Panzera, Vice President of Marketing at Ciot in Montreal, QC, received Confindustria Ceramica's North American Distributor Award during the Ceramics of Italy event at Coverings. The criteria for the coveted award includes consistency, exemplary service as an Italian tile importer and distributor, a high-caliber corporate image, inclination towards Ceramics of Italy products in recognition of their innovative design and technical qualities, and fair-trade practices in relation to Italian manufacturers.

Confindustria Ceramica Chairman Giovanni Savorani presented the award to Panzera, who is the goddaughter of Nick Di Tempora, Chairman of the Board of MAPEI Corporation. The award also included a prize package for travel to Cersaie, taking place in Bologna, Italy, from Sept. 23-27, 2019.

It was an exciting night for Italian tile and an honor to see Panzera's and Ciot's accomplishments recognized.

whisper headsets, Whitfield spoke to two groups of contractors, explaining the latest product innovations, how they are applied in the field and how they make jobs more efficient.

Coverings' "Clean the World" project would not be what it is without the involvement of Team MAPEI. Members of the marketing and demo teams joined with Florida Tile, Tiles of Italy, National Tile Contractors Association (NTCA) and others to fill 1,600 hygiene kits that were then donated to the Orlando Fisher House. The Fisher House provides free housing for families and caregivers of veterans and active-duty military receiving inpatient treatment at Orlando's VA hospital. The hygiene kits provided families with soap, razors, lotions – the daily amenities that bring a small measure of comfort during an

otherwise difficult time. "This is our third year of participating in the Clean the World initiative," said Steven Day, MAPEI's Director of Operational Marketing. "We were at the very beginning of this program and are excited to see it grow."

As Coverings ended and the booths were dismantled, it was easy to see which ones had been constructed using MAPEI mortars and grouts. Habitat for Humanity representatives passed through the booths asking for tile donations. Some tiles came off the walls easily; others did not, but rather shattered into pieces when the mortar did not release them easily from the walls. The charity's loss proved an interesting point: Even in a temporary setting, MAPEI quality is unmistakable.

## MAPEI's booth at Seatrade was a focal point

MAPEI's participation in Seatrade Cruise Global played a part in the trade show's success. Held at the Miami Beach Convention Center from April 9-11, the expo brought more than 11,000 professionals from around the world to discover the latest trends in the cruise industry.

The crew on deck from MAPEI was led by Guido Sardi, Business Development Manager for MAPEI's Products for the Marine Industry line, and Sebastiano Rivera, the line's sales representative. Guests to the booth were shown MAPEI's latest marine products and innovations. Bookending the booth were two large C-shape structures

coated in **Mapedeck Mirum** decorative skimming compound. Sweeping, curving and beautifully finished in gleaming alabaster white with a striated marble-like surface, these imposing structures were impossible to miss and drew curious crowds. The structures demonstrated the continuous coverage possible with **Mapedeck Mirum**, with ceilings, walls, coving and floors all coated in a flawless application.

One of the more popular features in the booth were "vision boxes" that highlighted the glow-in-the-dark properties of MAPEI's **Mapedeck Starlight Design** resin deck

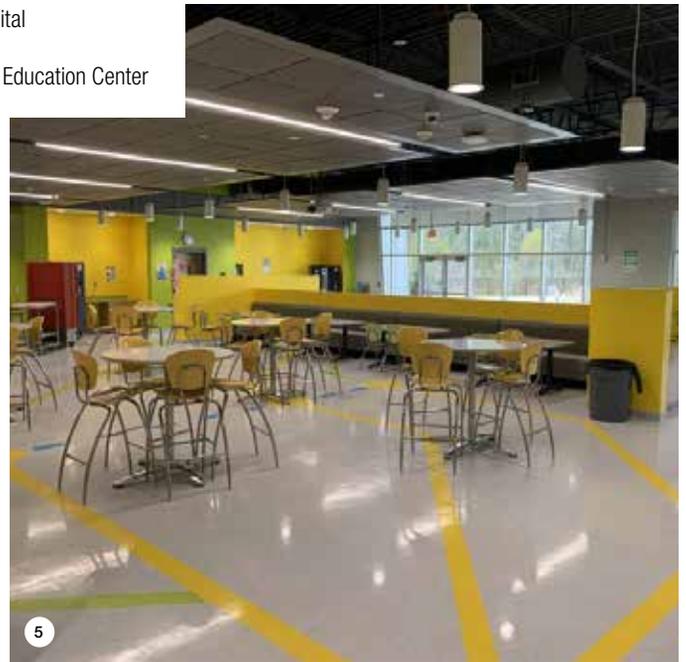
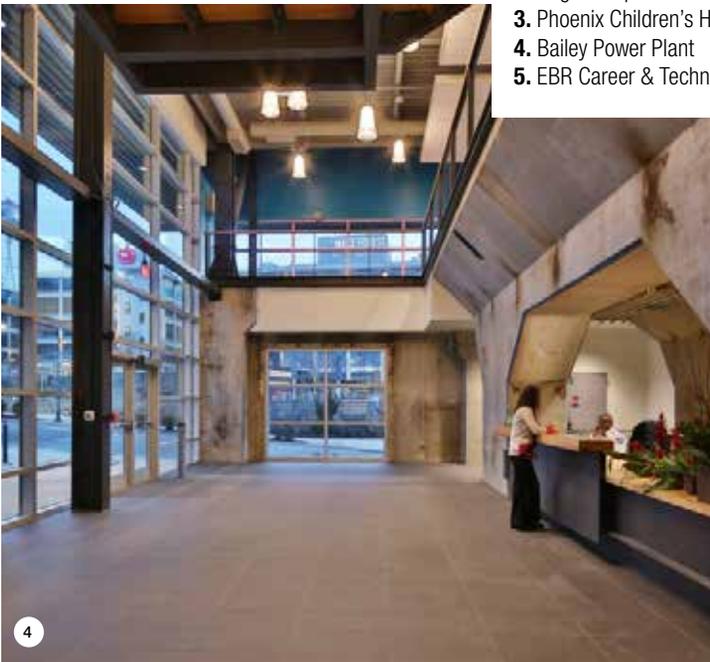
coating. The boxes allow viewers to look at a strip of the resin coating as it appears in natural sunlight, and then to turn on a black light to see how it appears at night – gently glowing and softly illuminating stairs, edges and any place that is desired.

The booth also interspersed large, colorful images from project references with large, colorful squares representing a variety of the colors available in **Mapedeck** products. It was a welcoming and inviting space, demonstrating how MAPEI has brought its world-famous marine systems to the United States and is in the process of expanding the product line.





1. Miami Beach Convention Center  
 2. Virginia Aquarium & Marine Science Center  
 3. Phoenix Children's Hospital  
 4. Bailey Power Plant  
 5. EBR Career & Technical Education Center



## MAPEI wins multiple honors at 2019 Starnet Design Awards

MAPEI was recently honored at the 21st annual Starnet Design Awards in Scottsdale, AZ. Intended to celebrate the partnerships between Starnet Worldwide Commercial Flooring members, vendor partners, and the architecture and design community, the awards showcase a wide array of floor-covering projects.

As a "Starnet Preferred Vendor," MAPEI was awarded the Gold Medal for its role in the following winning projects:

- In the Hospitality category for the Miami Beach Convention Center in Miami Beach, FL

- In the Mixed-Use category for the Bailey Power Plant in Winston-Salem, NC
- In the Education category for the EBR Career & Technical Education Center in Baton Rouge, LA
- In the Healthcare category for the Phoenix Children's Hospital emergency-department expansion in Phoenix, AZ
- In the People's Choice category for the Virginia Aquarium & Marine Science Center in Virginia Beach, VA

The panel of judges included Andrea Mayhew Hanson (AIA, WELL AP), the Senior Principal-in-Charge of Interior

Architecture for Dekker/Perich/Sabatini; David Mackler (AIA), President of Mackler Echt + Associates, Inc.; and James O'Neill, Founding Principal of Inventure Design.

"These winning projects underline the value that our partnerships provide," said Carol Hould, MAPEI's National Sales Director. "We are proud of our collaborative work and honored to be recognized for it."

## Tony Ziola awarded at NWFA Expo 2019

This year at the National Wood Flooring Association (NWFA) Expo in Fort Worth, TX, 12 individuals were recognized with NWFA Service Awards: eight with the Vanguard Award and four with the Ambassador Award, NWFA's highest recognition. These awards recognize individuals who demonstrate dedication and commitment to their profession.

Tony Ziola, MAPEI's *Ultracoat*® Systems Representative, was one of four individuals honored with the Ambassador Award. According to NWFA's guidelines for

the award, honorees must "actively participate in the advancement of industry programs, projects and initiatives through volunteerism, which includes (but is not limited to) participation on NWFA's boards and committees, participation in the Hardwood Federation Fly-In, NFWACP proctoring, and contributions to *Hardwood Floors* magazine."

From left: Michael Martin, NWFA President and CEO; Tony Ziola, Steve Brattin of SVB Wood Floors; and NWFA Chairman Chris Zizza



## MAPEI contributes to ICRI event in multiple ways



Rankin Jays presented a technical session on high-performance coatings at the 2019 ICRI Spring Convention.

The MAPEI contingent is always present at any International Concrete Repair Institute (ICRI) event. The 2019 ICRI Spring Convention, which was held April 8-10 in Jacksonville, FL, was no exception.

Things kicked off with a "Women in Concrete" off-site networking mixer, co-sponsored by MAPEI. Championing this event was Monica Rourke, MAPEI's Country Manager – Underground Technology Team, who also served as the first female president of the ICRI board in 2008. She noted that the women who are involved in ICRI truly help one another. "When I started, there were very few women even in the industry," Rourke said. "That's changing. And this networking event was designed for women and men to help and promote one another."

Overseen by Andrew Fulkerson, MAPEI's Technical Services Manager for Concrete Restoration Systems, the MAPEI team networked, manned the MAPEI booth, attended committee meetings for writing industry standards and participated in technical presentations. In the MAPEI booth, the team highlighted the product

innovations that debuted at the World of Concrete 2019, including *Planiseal*® **CR1** cold-fluid-applied waterproofing membrane, which kept with the convention's theme of "Waterproofing – Making It Dry and Appealing To The Eye."

Also contributing to the aesthetic theme was Rankin Jays, MAPEI's Business Development Leader for Coatings. His technical session presentation titled "Not All Paints Are Created Equal: Do You Still Get What You Asked For?" packed the room and sparked plenty of follow-up questions.

From highlighting high-performance products to contributing to the development of industry standards, this was another successful ICRI convention for MAPEI.

## Rapid Excavation & Tunneling Conference 2019 (RETC)

The Underground Technology Team (UTT) took the stage at this year's Rapid Excavation & Tunneling Conference (RETC), which was held at the Hyatt Regency Chicago from June 16-19, 2019. RETC is the premier annual tunneling conference in North America, and this year featured 21 tech sessions and 200 booths with 1,400 attendees from around the world.

Wesley Morrison, UTT Regional Manager for North America, led the way with an immersive look at UTT's complete line of products and associated technologies for

use in and on underground construction projects. Most notable among them were the presentations on *Polyfoamer ECO 100 Plus*, as it is the only truly "green" soil-conditioning product on the market with its biodegradable surfactants in combination with a natural lubricating polymer for ground conditioning in mechanized tunneling.

## 2019 BOMA International Conference & Expo

The Building Owners and Managers Association (BOMA) International Conference & Expo took place on June 22-25 in Salt Lake City, UT, at the Salt Palace

Convention Center. This year's conference offered more than 40 extensive educational sessions and business networking serving more than 16,500 members.

"System Solutions for Property Management" was at the forefront of the MAPEI booth, including exterior coatings and sealants, stone and tile maintenance, waterproofing, parking management, renovation and restoration for every aspect of building management. Rankin Jays, MAPEI's Business Development Leader for Coatings, and Mike Granatowski, Architectural & Commercial Projects Director, were on-hand at the booth to discuss MAPEI's building products and services.

## Donating products and volunteers for “ProjectVegas”

MAPEI has partnered with the charity organization AEC Cares for “ProjectVegas,” donating time and materials in order to improve conditions at the Las Vegas Rescue Mission (LVRM) in Las Vegas, NV. The Rescue Mission is composed of a campus that takes up two city blocks in downtown Las Vegas and provides beds, clothing, and recovery programs, as well as an estimated 30,000 meals to hundreds of men, women and children per month.

As a Christian, nonprofit organization, LVRM depends on the donations of volunteers to continue providing services and to ensure that the building itself is adequate. Consequently, AEC Cares adopted LVRM as the program’s 2019 “Blitz Build” day-long building project.

On June 5, the day before AIA’19 Conference on Architecture opened, the MAPEI team joined with more than 100 volunteers from throughout the industry to paint, repair and clean LVRM’s chapel and gym using donated products.

LVRM’s CEO Heather Engle described the event: “When people come into the

mission with the sole purpose of wanting to help, with no agenda other than lifting up the souls of others, it is a gift that is not definable by words. A clean and dignified space changes people, they stand up a little straighter and their pride is brighter. The ripple effects created by the time and generosity of MAPEI will go on for a very long time.”

MAPEI has been a participating sponsor in every AEC Cares project since the first one in 2007. Founded in 2011, AEC Cares is a 501(c)(3) non-profit organization composed of architects, engineers and contractors, as well as manufacturers’ representatives who assemble teams of professionals, once a year, from the United States to donate time and products in order to renovate an at-risk facility.

Mike Granatowski, MAPEI’s Director of Architectural and Commercial Projects, has been instrumental in organizing MAPEI’s involvement with AEC Cares events. He described this year’s project as “another huge success. Working together over the course of one day, architects, engineers, contractors and manufacturers’

representatives renovated the Rescue Mission’s chapel and gym. As always, it was a great day of hard work for a very worthwhile cause.”

In support of AEC Cares ProjectVegas, “MAPEI supplied **Planipatch**<sup>®</sup>, our polymer-modified, fast-setting, cementitious patch, for patching the floor in the gym; and **Ultrasport**<sup>™</sup> **PU 2K**, our premium, two-part, polyurethane sports flooring adhesive, for installing rubber flooring in the gym and in the chapel. We also supplied **Ultrabond ECO**<sup>®</sup> **85**, our quick-grab carpet adhesive for carpet installation throughout,” Granatowski continued. “These rapid-setting products are perfect for use in a blitz-build installation. When you only have one afternoon, speed and durability count. These products provide high quality and high speed.”

Steven Day, MAPEI’s Director of Operational Marketing, was also on hand as he has been for each of the 8 years that the program has been in existence. “MAPEI is always looking to find and participate in these types of events on an annual basis. We strive to give back to the community whenever possible.”

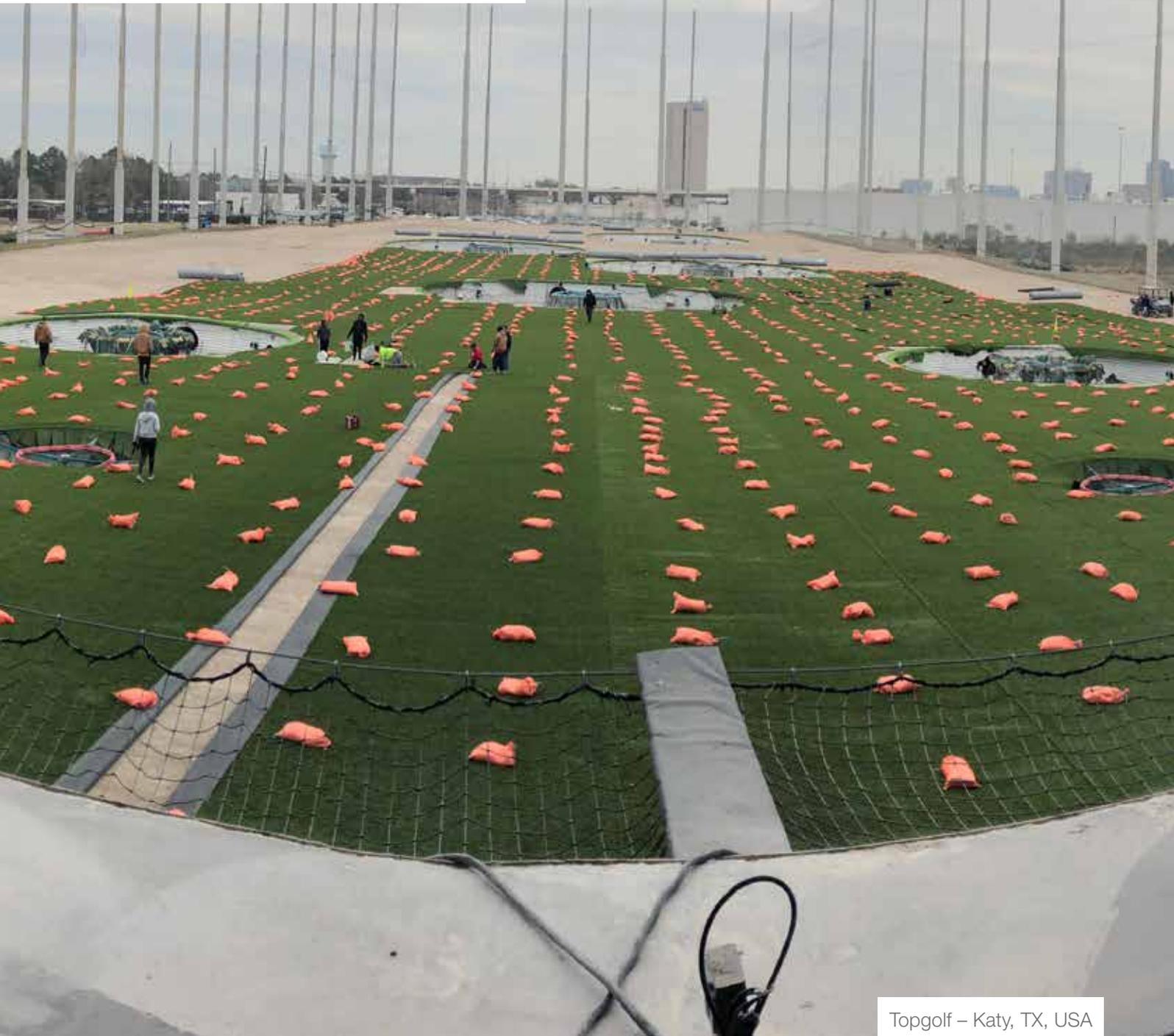


In the photo above, MAPEI volunteers (from left) Mallory Williams, Steven Day, Lisa Fyke, Mike Granatowski and Mackenzie Morrissey took part in the day-long “Blitz Build.”



# COURSE CORRECTION

After a hurricane, MAPEI products help to rebuild a flooded golf course



Topgolf – Katy, TX, USA



**Overview:** MAPEI's *Mapesoil 100* sub-base binder and *Ultrabond Turf PU 1K* adhesive were essential to repairing the flooded golf course at a top-notch recreation venue.

In the world of recreational golf, Topgolf has become a destination that challenges the popularity of mini golf courses and traditional driving ranges. In fact, the Topgolf "sports entertainment centers" provide a range of entertainment options for all ages and abilities that are not found in the traditional golf courses. Each Topgolf location features climate-controlled "hitting bays" for year-round golfing, as well as food, beverages, live music and HDTVs showing games of football, basketball and, of course, golf. The Topgolf venues also offer golf lessons, leagues and tournaments, as well as providing a location for concerts and corporate events.

Topgolf is a rapidly growing business. As of this writing there are 54 locations worldwide – 50 in the United States, three in the United Kingdom, and one in Australia. The company headquarters is located in Dallas, and this MAPEI project took place at another Texas location, in the Houston suburb of Katy.

The Topgolf location in Katy had been heavily damaged by Hurricane Harvey, which inundated Texas in 2017. As stated by Anthony Graham, Product Manager for MAPEI's OEM & Sports Divisions, "The flooding on the golf course had caused heavy erosion, which had resulted in dips and divots. These in turn had created poor aesthetics and issues with golf play at the facility. The maintenance crews had tried numerous repair efforts with little to no success."

Enter MAPEI. "We presented the idea of using *Mapesoil 100* to repair and permanently eliminate their issues with the sub-base, using the ground material that was already in place. They agreed," Graham said.

## Stepping up to the tee

With MAPEI, every project is important, but this project was extra special. This was the first large installation of *Mapesoil 100*

in the United States and also the most unusual due to the many undulations with the grade, because the jobsite mirrored a golf course. Most applications of *Mapesoil 100* historically have been on somewhat flat surfaces (soccer pitches) with minimal grades of 3% to 4% over large areas, Graham explained.

Due to the project's importance and the installing crew's lack of experience with *Mapesoil 100*, MAPEI's coordinators Elisa Portigliatti and Alberto Cosmelli were on hand from Italy, to join the North American MAPEI Sports crew as advisors and consultants throughout the installation. The subcontracted installer Lion Equipment brought in a crew of 15 to apply 195,800 pounds (88 813 kg) of *Mapesoil 100* over 168,000 square feet (15 608 m<sup>2</sup>), Graham said.

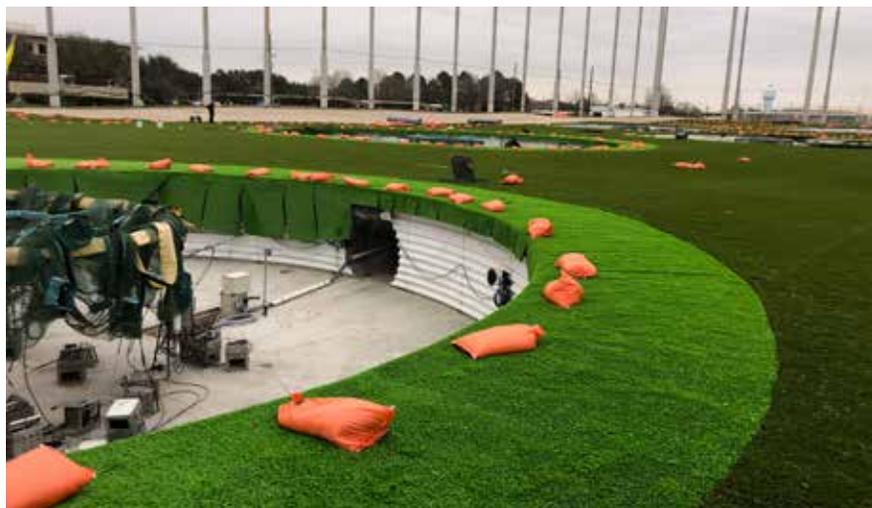
## MAPEI products on the jobsite

The Lion Equipment crew installed *Mapesoil 100* over the course of four days. To begin, the crew divided the grounds into four quadrants. The crew tilled and loosened the soil to the specified depth with a grader and a mixer. Then, water was added via water truck to bring the soil to the optimal water content. "We only had to add water to Quadrants 2, 3 and 4," Graham said. "A rain shower the previous day had soaked Quadrant 1, and it still contained enough moisture for the *Mapesoil 100* application."

Next, *Mapesoil 100* was applied evenly at a pre-determined application rate using a drop spreader. "The crew broadcast one 'super sack' at a time," Graham stated. "Although the drop spreader

## Product Focus

*Ultrabond Turf PU 1K* is a fast-setting, moisture-curing, one-component, urethane adhesive specifically designed for bonding of synthetic turf in high-performance sports installations. Offering excellent weather resistance, *Ultrabond Turf PU 1K* can be used in interior and exterior applications. It meets FIFA requirements for bond strength in sports-turf applications.



gave us the capacity to spread up to six sacks at a time, we decided to spread one sack at a time rather than risk improperly applying product because of the height and spread range of the machine and the course. However, in Quadrant 4, which was close to the building, the crew cut the super sacks and spread the *Mapesoil 100* via small loaders to limit 'dust-up'."

Once *Mapesoil 100* was spread, the crew used large tractors with mixing attachments to mix the product into the soil. For tighter areas around the targets on the golf course, they used the small loaders with front mixer attachments.

The water trucks were then brought back to apply the proper amount of moisture, allowing hydraulic binding of *Mapesoil 100* to take place. Each quadrant was then graded and rolled to compact the soil. "The final application was then allowed to cure without any machinery traffic for approximately 48 hours," Graham said. "Then it was time to install the turf rolls."

The new synthetic turf installation began with the use of *Ultrabond Turf PU 1K* adhesive. "Topgolf had been using our turf adhesive for two years prior for all of their installations, so they were quite familiar with this product," Graham said. It was installed at junctions of 10 inches (25 cm) wide at all of the turf's seams, adhering the rolls to create a seamless "lawn" of grass. Multiple colors of turf were used to mirror the different types of grass that are found on a golf course. The entire process of rebuilding the sub-base and installing the synthetic turf took seven days. "The overall *Mapesoil 100* application time frame was approximately 36 working hours," Graham added.

And, when the crew was finished, the golf course was once again pristine. The hurricane damage and flooding were distant memories.

The installation of *Mapesoil 100* and *Ultrabond Turf PU 1K* adhesive was a success for Topgolf, and "they are now working on building in the product application into their specs for all new builds," Graham stated. Talk about hitting a hole in one!

## TECHNICAL DATA

**Topgolf** – Katy, TX, USA

**Year of original construction:** 2012

**Year of MAPEI involvement:** 2019

**Where MAPEI products were used:** MAPEI's *Mapesoil™ 100* was installed on 168,000 sq. ft. (15 608 m<sup>2</sup>) of soil for stabilization to prevent erosion and to promote drainage. *Ultrabond® Turf PU 1K* adhesive was used to seam the synthetic turf together.

**Project owner:** Topgolf USA

**Contractor:** Lion Equipment

**Installer:** Lion Equipment

**Project manager:** Dale Mauch

**Photographer:** Anthony Graham

**MAPEI coordinators:** Anthony Graham, Elisa Portigliatti, Alberto Cosmelli

**Challenges:** The most unusual installation of *Mapesoil 100* in the USA thus far, because the

jobsite mirrored a golf course and featured many undulations in the grade

### MAPEI Products

Soil stabilization and drainage promotion: *Mapesoil 100*

Adhesion of synthetic turf: *Ultrabond Turf PU 1K*

## Ultracoat® Gym and Ultracoat Gym Pro

*Ultracoat Gym* is a one-part, water-based formula designed to provide a high-gloss finish for professional gym floors. It is a self-crosslinking, aliphatic polyurethane resin system with excellent abrasion resistance and slip resistance suitable for solid, pre-sanded wood sports floors.

*Ultracoat Gym Pro* is a two-part, aziridine cross-linked, water-based, high-performance formula designed to provide a high-gloss finish for professional, wood sports floors.

### Features and Benefits

#### Ultracoat Gym

- Non-yellowing even after multiple coats
- Resistant to moisture and perspiration
- Easy to maintain and recoat
- 90 gloss finish

#### Ultracoat Gym Pro

- Crystal clear and non-yellowing even after multiple coats
- Superior resistance to moisture and perspiration
- Excellent traction and abrasion resistance
- 90 gloss finish

### Uses

#### Ultracoat Gym

- Use to finish sports floors made of solid maple or other wood species.

#### Ultracoat Gym Pro

- Use to finish professional sports floors made of solid maple or other wood species.

See full product details at [www.mapel.com](http://www.mapel.com).



### Product Performance Properties

Laboratory Test	Results
Density	8.66 lbs. per U.S. gal. (1.03 g per L)
Solids content	33%
Gloss – ASTM D523	90
Flash point	> 200°F (93°C)
VOCs (Rule #1133 of California's SCAQMD)	193 g per L

**Approximate Coverage\*** per 5 U.S. gals. (18.9 L)

Coverage
2,000 to 3,000 sq. ft. (186 to 279 m <sup>2</sup> )

\* Coverage may vary based on application techniques.



### Product Performance Properties

Laboratory Test	Results
Density	8.66 lbs. per U.S. gal. (1.03 g per L)
Solids content	33%
Gloss – ASTM D523	90
Flash point	> 200°F (93°C)
VOCs (Rule #1133 of California's SCAQMD)	10 g per L

**Approximate Coverage\*** per 5 U.S. gals. + 15 U.S. oz. (19.4 L)

Coverage
2,000 to 3,000 sq. ft. (186 to 279 m <sup>2</sup> )

\* Coverage may vary based on application techniques.



# WHY, WE DO DECLARE

## Environmental Product Declarations for MAPEI products help in certifying projects as green

Sustainability in the tile industry has evolved in recent years to make transparency a higher priority. Buyers are increasingly demanding to know the full extent of a product's impact on human health and the environment. From product extraction through disposal, the transparency of a product at each stage of its life-cycle has become a critical driver in specifying building products/materials and purchasing. MAPEI is committed to this new level of product transparency – broadening our focus from single attributes like recycled content and VOCs, to product transparency reporting including Manufacturers' Inventory (MI) reports and Environmental Product Declaration (EPD) reports.

An EPD is a voluntarily developed report that communicates transparent and comparable information about a product's impact through its entire life-cycle, including its material content, resource extraction/processing, manufacturing/assembly, distribution/transportation, use/maintenance and end-of-life (reuse, repurpose and disposal). EPDs are based upon an established set of Product Category Rules (PCRs) and independently verified life-cycle assessment data, allowing for comparability of impacts across products in a specified category. This report enables manufacturers to make disclosures in a credible, streamlined and universally understood manner.

Traditionally, EPDs disclose such life-cycle-based environmental impact information as the carbon footprint of a product. Depending on how category-specific the PCRs are written, EPDs may disclose additional information such as toxicity and human health impacts. These

reports are derived from in-depth analysis of data related to tile manufacturing and use, including such aspects as energy and resource consumption, air emissions, and production waste. EPD program operators, such as UL Environment, verify that the information within the EPD is accurate and was developed in conformance with ISO 14025 guidelines. The result is a report that is certified to be in compliance with ISO's guidelines and the process outlined therein.

Three types of EPDs exist, with applicability depending on the industry in question:

1. Product-specific – Used for industries without established PCRs and isn't always third-party-verified
2. Product-specific, Type III – Covers a single product from a manufacturer and has a third-party reviewer
3. Industry-wide (generic) – Covers a broad classification of products, such as cement mortars and grouts

### MAPEI's leadership role

MAPEI is committed to transparency, from the selection of raw materials to the jobsite delivery of finished products. MAPEI North America assisted the Tile Council of North America (TCNA) in establishing the first industry-wide EPDs. In addition, the global MAPEI S.p.A. finalized the EPD Process Certification, meaning that its processes for EPD creation have been quality-assured by an external certification body. The EPD Process Certification, a feature of the International EPD System, allows companies to create EPDs more efficiently and on a large scale.

For project teams seeking to satisfy green-building project requirements, MAPEI offers more than 30 global, product-specific EPDs. MAPEI also provides two industry-wide EPDs for tile mortar and tile grout that cover

more than 50 of MAPEI's own products. EPDs can contribute to project certification via LEED, Green Globes, BREEAM, Living Building Challenge (LBC), International Green Construction Code (IGCC) and other green-building rating systems and standards.

The largest of these programs, LEED, allows buildings to obtain points by contributing to LEED's Materials & Resources credit for EPDs. The credit requires the use of at least 20 permanently installed building products from at least five different manufacturers that offer one of the three EPD types listed above.

EPDs are becoming a de facto requirement for sustainable buildings, which is an incentive for industries and manufacturers to generate them. When EPDs are bundled with MAPEI's Manufacturers' Inventory reports and other sustainable product attributes, such as low VOC content, buildings can potentially contribute toward additional "green" points.

The construction industry continues to evolve, with a trend toward transparency as well as requirements for evaluating and reporting on health and environmental impacts. Keeping pace with this industry evolution, MAPEI continues to develop the broadest set of innovative, sustainable products possible.



**1:** A general industry-wide EPD for cement mortar  
**2:** An EPD for specific MAPEI products



**About the author:**  
 Brittany Storm

Brittany is the Sustainability Manager for MAPEI Corporation. Her background as a

sustainable building consultant and background in construction allow her to speak to audiences about both the big picture and technical aspects of a project. Brittany is a LEED Accredited Professional (AP) with BD+C and ID+C specialties as well as a WELL AP and Fitwel Ambassador. In addition, she is active on many sustainability committees.



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-TV video program rebooted

The MAPEI Technical Institute's educational videos, dubbed MTI-TV, have been redesigned. The newly revamped videos will be hosted by Sam Biondo, MAPEI's National Technical Presenter. Program topics will be expanded to cover many of MAPEI's lines – products for tile/stone installation, floor-covering installation, wood-flooring installation, waterproofing and concrete restoration.

In each episode, Biondo will be joined by a guest expert on the subject at hand for technical discussions regarding products and projects. Biondo will also host product spotlights – short segments on individual products that explain installation techniques, give

tips for successful applications and briefly touch on the chemistry behind the product solution.

MTI-TV will continue to "air" on the YouTube channels for MAPEI USA and MAPEI Canada, as well as on MAPEI's own Websites.



To see the full schedule of upcoming MTI seminars, visit the Careers & Training section at [www.mapei.com](http://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.

## Fishman Flooring Solutions' Vendor of the Year



MAPEI was awarded with the Fishman Vendor Partner of the Year Award from Fishman Flooring Solutions at Fishman's annual sales meeting in Baltimore, MD. The Vendor Partner of the Year Award is presented to those companies who "demonstrate the highest standards for training Fishman's sales team, customers and contractors in the proper use of the vendor's products. Recipients must also provide superior marketplace support for the products on which they provided the training." As stated by Jeff Johnson, Business Manager for MAPEI's Floor Covering Installation Systems, "MAPEI is honored to receive this award from Fishman. This award is the recognition of all the hard work our sales team puts into the partnership with Fishman Flooring and also recognizes just how important this relationship is between our two companies."

From left, Bill Mabeus (Fishman Executive Vice President), Jeff Johnson (MAPEI Business Manager, FCIS), Allen Janofsky (MAPEI Sales Representative), Vince Linton (MAPEI Sales Representative), David Kocienda (MAPEI Sales Representative), Lee Tindall (MAPEI Business Development Leader) and Bob Wagner (Fishman President and CEO).

## MAPEI donates to Bahamas relief effort

Familiar with the devastating impact of hurricanes, MAPEI has donated to the Bahamian recovery effort, sending roofing supplies from Puerto Rico as well as building accessories and monetary donations from MAPEI's company headquarters in Deerfield Beach, FL.

Working with Tropix Shipping, MAPEI Corporation and MAPEI Caribe timed donations to concurrently reach the Bahamas Recovery Effort. MAPEI Caribe sent a 40-foot-long (12.2-meter) shipping container filled with 20 pallets containing 600 units of bituminous, self-adhesive roofing membrane. MAPEI Corporation donated 1,000 buckets and 1,000 pairs

of work gloves. "We know from first-hand experience that roofing materials, buckets, and strong work gloves are necessary elements in the rebuilding process," said Luigi Di Geso, President and CEO of MAPEI North America.

"As an international corporation, MAPEI has a long history of reaching out in times of trouble," Di Geso continued. "In addition to the product donations, as a company, we also donated to the Red Cross Bahamas Relief Fund. It is a core company value that we give back to the communities where we live and work, and those in the Bahamas have our full support."



## HGTV remodeler relies on MAPEI

Emmy-award-winning host, designer and executive producer Chip Wade, of HGTV's "Elbow Room," is partnering with MAPEI for his latest renovation. Wade is using MAPEI products to install tile, stone and flooring throughout the extensive property of Misty Mill, a showhouse project that he is documenting on social media. For details, follow #MistyMill or visit [www.mistymill.com](http://www.mistymill.com).



## MAPEI wins Fuse Award

Fuse Alliance honored MAPEI with the Supplier Award for “Best Support” at the Fuse Alliance Annual Sales Meeting in Orlando, FL. The award is the result of a Fuse-conducted member survey. “We are honored to be named the supplier with the ‘Best Support,’” said Kevin Carroll, MAPEI’s Business Development Director. “This shows our commitment to being a resource to our clients and our dedication to being a Supplier of Choice.”



The “Idea House” under construction

## “Idea House” utilizes MAPEI products

*Southern Living* magazine has unveiled its 2019 “Idea House,” which features a variety of MAPEI products for tile and stone, and wood flooring. Products featured include **Keracaulk® S** sanded caulk, **Keracolor® S** sanded grout, **4 to 1™ Mud Bed Mix**, **Mapelastic® CI** membrane, **Ker® 111** thin-set, **Primer L™**, **Novoplan® Easy Plus** self-leveler and **Ultradond ECO® 995** adhesive. Located in the Crane Island development of Amelia Island, FL, the two-story waterfront home was built with high-quality products and features high-end decor. The home is open to the public through December 2019, with a portion of tour proceeds benefiting the Amelia Island Museum of History. For more information, visit <https://www.southernliving.com/home/idea-houses/2019-idea-house-tour>.



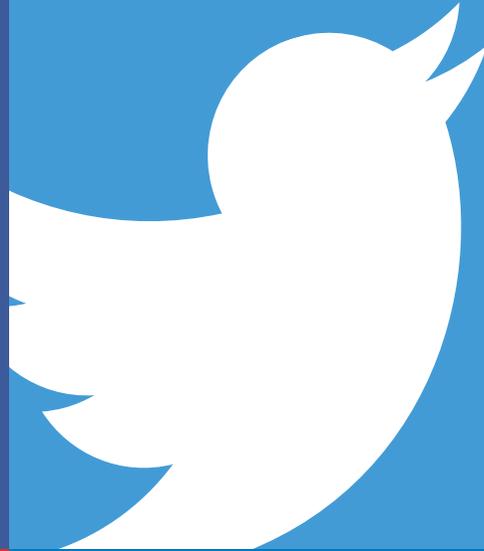
LIKE,  
SHARE,  
COMMENT

[facebook.com/mapeiusa](https://facebook.com/mapeiusa)  
[facebook.com/mapeicanada](https://facebook.com/mapeicanada)



DO YOU  
FOLLOW  
US?

[twitter.com/mapeiusa](https://twitter.com/mapeiusa)  
[twitter.com/mapeicanada](https://twitter.com/mapeicanada)



LIKE,  
COMMENT,  
CONNECT

[linkedin.com/company/mapeiusa](https://linkedin.com/company/mapeiusa)  
[linkedin.com/company/mapei-canada](https://linkedin.com/company/mapei-canada)



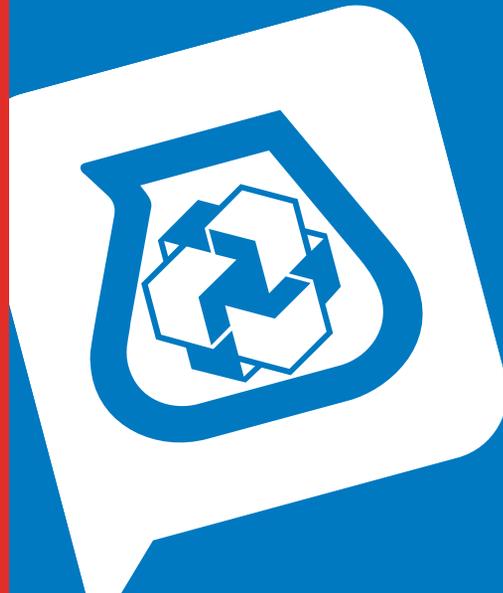
WATCH  
ONLINE  
ANYTIME

[youtube.com/mapeiusa](https://youtube.com/mapeiusa)  
Search for "MAPEI Canada" on YouTube



CHECK OUR  
LATEST  
BLOG

[mapei.com/US-EN/tech-talk.asp](https://mapei.com/US-EN/tech-talk.asp)  
[mapei.com/CA-EN/tech-talk.asp](https://mapei.com/CA-EN/tech-talk.asp)



SEE THE  
COMPLETE  
PICTURE

[instagram.com/mapeiusa](https://instagram.com/mapeiusa)  
[instagram.com/mapeicanada](https://instagram.com/mapeicanada)



## THE WORLD OF



# MAPEI®



**TILE & STONE** INSTALLATION SYSTEMS



**FLOOR COVERING** INSTALLATION SYSTEMS



PRODUCTS FOR **SPORTS FLOORING**



PRODUCTS FOR **WOOD FLOORING**



**CONCRETE RESTORATION** SYSTEMS



PRODUCTS FOR **STRUCTURAL STRENGTHENING**



PRODUCTS FOR **UNDERGROUND CONSTRUCTION**



**ADMIXTURES** FOR **CONCRETE**



**WATERPROOFING** SYSTEMS



**CEMENT ADDITIVES**



PRODUCTS FOR THE **MARINE INDUSTRY\***



**CEMENTITIOUS AND RESIN FLOORING** SYSTEMS\*\*

\* USA only

\*\* Canada only

### Headquarters of North America

1144 East Newport Center Drive  
Deerfield Beach, FL 33442

### Customer Service

1-800-42-MAPEI (1-800-426-2734)

### Technical Services

1-800-992-6273 (U.S. and Puerto Rico)  
1-800-361-9309 (Canada)

### NORTH AMERICA

---

#### United States

Arizona  
California  
Florida  
Georgia  
Illinois  
Minnesota  
New Jersey  
Texas  
Virginia

#### Canada

British Columbia  
Ontario  
Quebec

#### Mexico

### SOUTH AMERICA / CARIBBEAN / CENTRAL AMERICA

---

Argentina  
Brazil  
Colombia  
Panama  
Peru  
Puerto Rico  
Venezuela

### EUROPE

---

Austria  
Belgium  
Bulgaria  
Croatia  
Czech Republic  
Denmark  
Finland  
France  
Germany  
Greece  
Hungary  
**Italy (global headquarters)**  
Luxembourg  
Netherlands  
Norway  
Poland  
Portugal  
Romania  
Russia  
Serbia  
Slovakia  
Slovenia  
Spain  
Sweden  
Switzerland  
Turkey  
Ukraine  
United Kingdom

### ASIA / OCEANIA

---

Australia  
China  
Hong Kong  
India  
Indonesia  
Malaysia  
New Zealand  
Philippines  
Qatar  
Singapore  
South Korea  
United Arab Emirates  
Vietnam

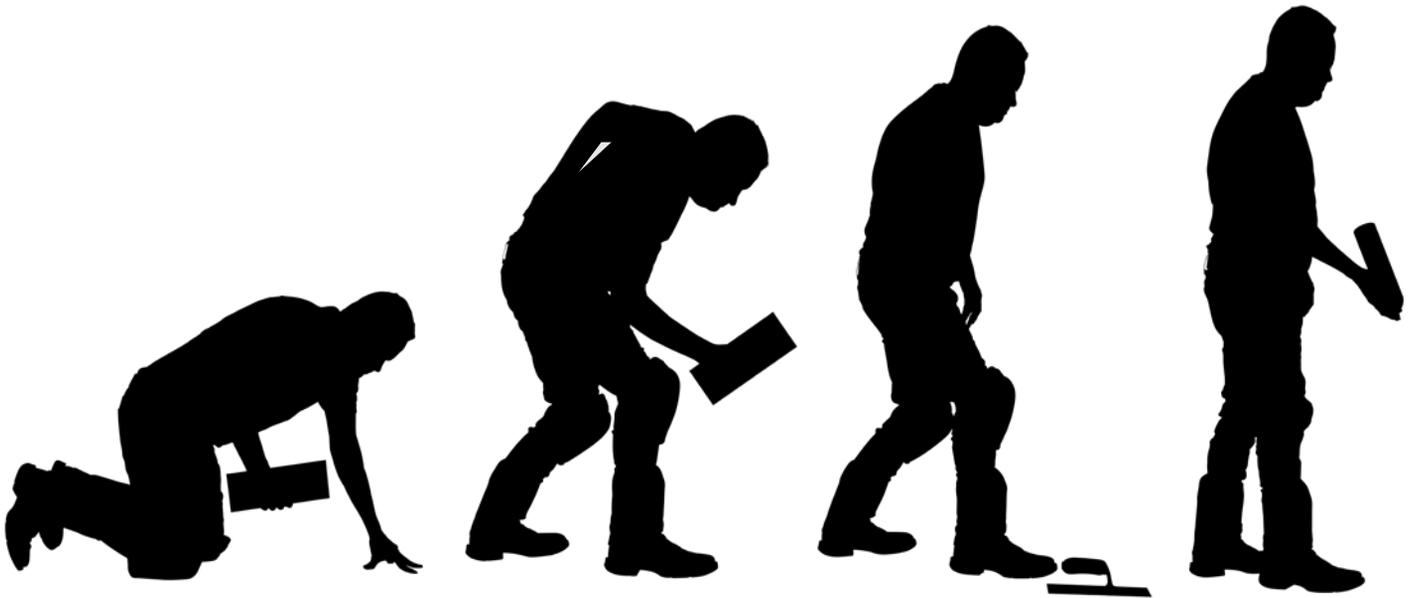
### AFRICA

---

Egypt  
Kenya  
South Africa

# Evolve!

Get back upright again with MAPEI's  
**Ultrabond® Spray** adhesives



MAPEI's new spray adhesives revolutionize the installation of carpet and resilient flooring. Designed to replace trowel-applied adhesives, these aerosolized, water-based, high-performance, acrylic adhesives allow installers to stand upright during the application process – with no more kneeling or crawling on floors. **Ultrabond Spray RFA** is intended for use with resilient flooring, while **Ultrabond Spray CTA** can be used with carpet tiles.

Both sprays feature:

- High moisture resistance for bond durability
- Superior tack for secure floor placement
- Extended coverage when compared with trowel-applied adhesives
- 1 can of *Ultrabond Spray CTA* or *RFA* = 1 gallon of traditional adhesive
- Quick drying time, permitting immediate foot traffic
- Bond performance equal to traditional adhesives

MAPEI's *Ultrabond Spray* adhesives let you take a "stand"... with quicker, easier installations. Your knees and your wallet will thank you. To find out more about the evolution in spray adhesive technology, visit [www.mapei.com](http://www.mapei.com) or call 1-800-42-MAPEI.



MAPEI USA  
MAPEI Canada

