

Realtà MAPEI

NORTH AMERICA

Aloha, MAPEI!

Total system solutions
for luxury island living

ISSUE 32



2020: Thankful for the Essentials

2020 has been an unprecedented year. Nobody could have predicted a worldwide pandemic and global lockdowns. And while it has been hard, it has also brought some very important lessons. We've had to adapt, to learn new skills to meet the new marketplace, to push to meet unforeseen challenges. Throughout it all, a word has taken on new meaning: "essential."

Luigi Di Geso

President and CEO,
MAPEI North America

At the beginning of the pandemic, MAPEI was declared "essential." This meant that because we were in the construction industry and involved with the important business of the nation's infrastructure, we could remain open during the lockdown.

However, as the pandemic continued, and I watched you all continue to work throughout the darkest days of this year – many of you coming in to MAPEI offices and plants – the word "essential" took on new meaning.

Day in, day out, it is you – your hard work, your determination, your refusal to stop – that is essential at MAPEI. And it is your commitment to excellence that makes MAPEI essential.

We are defined by our actions, but they become starkly evident in a year such as this one. I am proud of each one of you. And I thank you. In spite of all the challenges, together we overcame them, pushing through to a successful year. That is the essence of teamwork, the essence of MAPEI.

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

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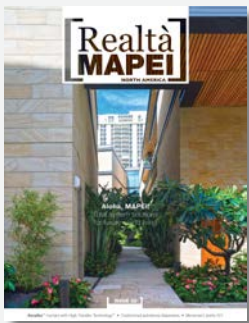
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One of Honolulu's newest developments proves that sustainability and top-of-the-line luxury go hand in hand, thanks to MAPEI's total system solutions.

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GET CAUGHT IN MAPEI'S NEW WEB

MAPEI's upgraded Website creates an easier,
more powerful online experience

Recently launched, MAPEI's new Website is more powerful than ever before. The site contains many new features, including a responsive design. This means that it will function properly and scale appropriately no matter which device you are using – desktop, laptop, tablet or smartphone.

Chief among the new features on the site is a new section called MyMAPEI. This feature allows users to customize their Website experience. By creating a MyMAPEI account, users can subscribe to our newsletters, to *Realtà MAPEI North America* magazine (print and/or digital editions) and to *Realtà MAPEI International* magazine. In the MyMAPEI section, you can also save, print and share articles, videos and product information. You can even track trainings. MyMAPEI essentially lets you create your own Web hub within the larger framework of MAPEI's Website.

Each product line page is now its own hub. This means that when you click on the Tile & Stone Installation Systems page, for example, you will only find information pertaining to that line: All documents, product videos, news items, select *Realtà* articles and, of course, products related to that line will appear on the page. This significantly streamlines the user's experience. A "Search All" function remains for users who are uncertain about where to find a specific product.

Updated Websites for MAPEI North America

USA: www.mapei.us
Puerto Rico: www.mapei.com/pr
Canada: www.mapei.ca



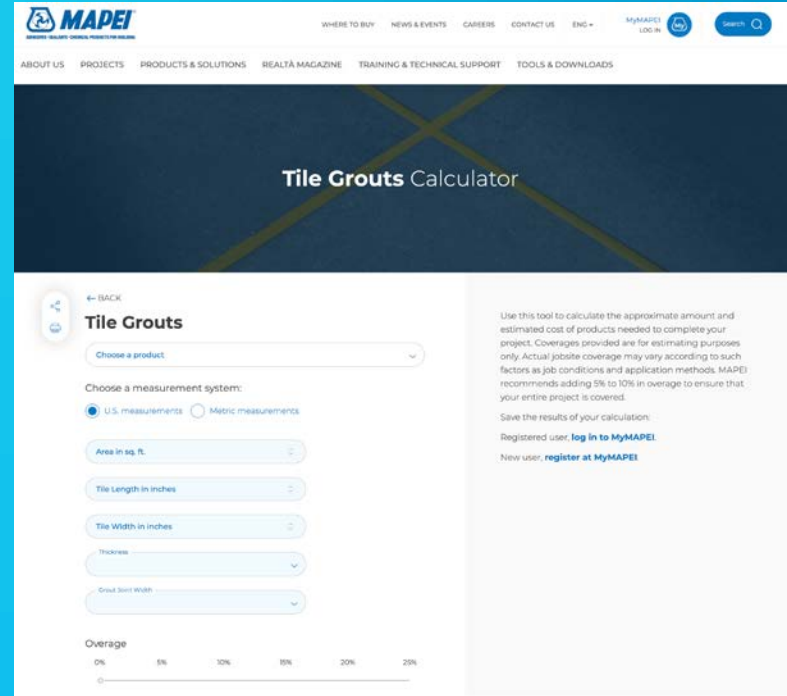
11 product calculators

The site now includes 11 product calculators – the most product calculators in the industry – to help estimate the amount of material needed for a project. Available online and on our new app, these calculators take the guesswork out of determining product amounts. Whether you are working with tile mortars, construction grouts or even high-performance coatings, these powerful tools will help you calculate the approximate amount of product needed to complete your project.

The new product calculators are for:

- Caulks, sealants and joint fillers.
- Construction grouts.
- Exterior finishing.
- Floor-covering adhesives.
- Levelers and toppings.
- Mortar beds and concrete repair mortars.
- Patches and skimcoats.
- Primers and coatings.
- Sheet membranes and reinforcing mesh/fabrics.
- Tile grouts.
- Tile mortars and adhesives.

The calculators allow you to choose U.S. or metric measurements, as well as your preferred amount of overage (we recommend adding 5% to 10% to ensure that the entire project is covered). The calculators will provide the amount of product needed to complete your job. You can even print, save and share the calculations.



MAPEI: Website of the Year

The global Websites of mapei.com were collectively awarded the 2020 Website of the Year in the “Multisite” category of a competition organized by Progress Sifinity, a Web Content Management System (CMS) platform.

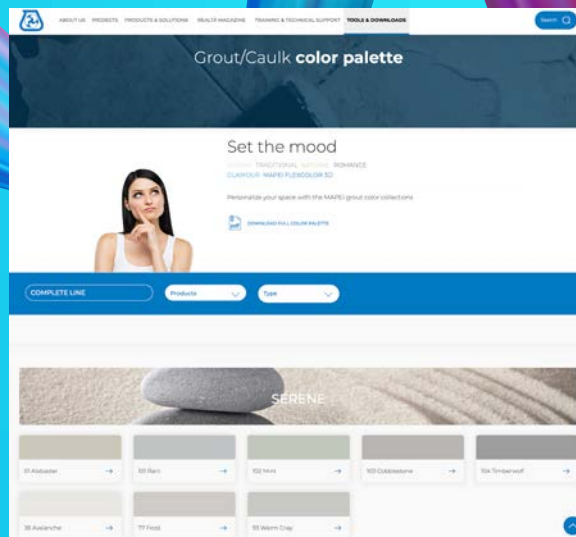
This competition, which was organized for the first time in 2011, is designed to recognize Websites developed on the Progress Sifinity platform offering outstanding user experience and making innovative use of functions promoted by the platform itself.

Winners were selected in two stages. During the first stage, Progress Sifinity makes nominations based on six guidelines: Design, content, layout and navigation, innovation, complexity, and relevance. The second phase involves public voting to select winners in the various categories.

MAPEI.com was rewarded in the categories Complexity and Layout for its master site in Italian and the local Websites of the MAPEI Group’s subsidiary companies. MAPEI’s content adds up to 59 Websites that are translated into 62 languages with approximately 240,000 pages and that attract 550,000 individual visitors each month.

The project to design MAPEI’s new Websites first began in 2017 with the relaunching of the Italian holding company’s main Website. It was then developed and extended to cover all MAPEI Group subsidiaries. The final three Websites of the North American subsidiaries were launched in May 2020.

The prestigious Progress Sifinity honor recognized the design framework of MAPEI’s Websites, the quality of the specific technical content for the general public, the wide range of tools developed using the platform’s own features and capabilities, and the design and ease of navigation of the Website that is optimized to be intuitively and responsively used.



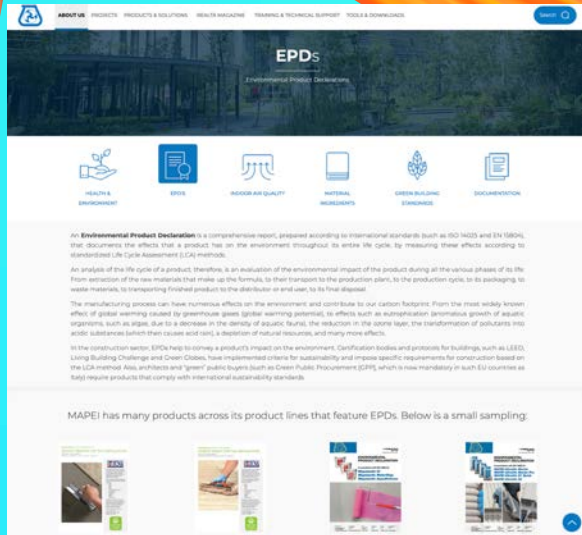
Tools for architects

Another section that has been greatly enhanced is our Tools for Architects page. MAPEI products are prominent in a wide variety of specifications for flooring installations as well as concrete restoration for construction and heavy industry. The links found on the Tools for Architects page help architectural design professionals to narrow their search and to find everything needed for specifying the right product for their specific applications.

Downloadable tools in the Tools for Architects section include:

- **System Solutions:** System solution pages are now interactive. Users can click on the specific products in the system, selecting related materials including TDSs, SDSs and sustainability documentation, which can all be downloaded as a bundle. This is a fantastic time-saving tool for contractors, specifying engineers and architects.
- **3-part guide specifications:** Users can download customized, industry-approved specifications for tile and stone installation systems, floor-covering installation systems, decorative topping systems and waterproofing systems.
- **Grout/caulk color palettes:** With one click, you can easily access MAPEI’s color palettes.
- **Realtà MAPEI magazine:** You can search the articles, read and subscribe to *Realtà MAPEI North America* and *Realtà International*, staying up-to-date with the latest news from the world of MAPEI.
- **Health and environment:** Users can access MAPEI’s plethora of sustainability documentation, including EPDs, MIs and other environmental compliance documentation through this link. We now have a greatly enhanced Health & Environment section – six new pages, in fact – showcasing our sustainability efforts. We are leading the industry in our certifications, and now our Website reflects our commitment to this initiative.

The Tools for Architects page also provides a link to the Projects Reference page. These projects highlight not only successful jobs in North America, but also around the world. They underscore the fact that for more than 80 years, MAPEI has provided lasting solutions for thousands of projects.



The page's link to the CAD/Spec Guide provides users with interactive online tools designed to help draft a CSI 3-part specification using current industry-approved methods for ceramic, glass and stone tile installations. Users can easily access MAPEI's CAD/Spec Guide to select CADs and specifications for a variety of installations, by using any of these methods:

- Search by keyword (floors, walls, interior, exterior, etc.)
- Search by installation category or method
- Search by application type (bathroom floor, shower wall, balcony deck, etc.)

In addition, the CAD/Spec Guide allows searches of such installation categories as ceramic tile, gauged porcelain tile, stone tile, resilient and wood. Final downloadable packages can include:

- CAD and specification.
- AutoCAD (DWG file).
- Technical Data Sheets for MAPEI products listed in the CAD and specification.

The Tools for Architects page also contains links to ARCAT and MasterSpec specification writing tools, as well as to MAPEI's own Spec Maestro. Plus, there's information on MAPEI's Architectural Education Program, which offers AIA-registered courses related to system solutions and gives architects the flexibility to earn Continuing Education Units in their own offices.

MAPEI's best-in-class product and system warranties can also be found on the Tools for Architects page, as well as on the Website's homepage.

So much more

There are many more enhancements to the site, such as a Video Library housing all of our video media – including MAPEI online Webinars. But the best way to discover all that the new site has to offer is to actually use it... and to check back often. We are constantly adding new features.

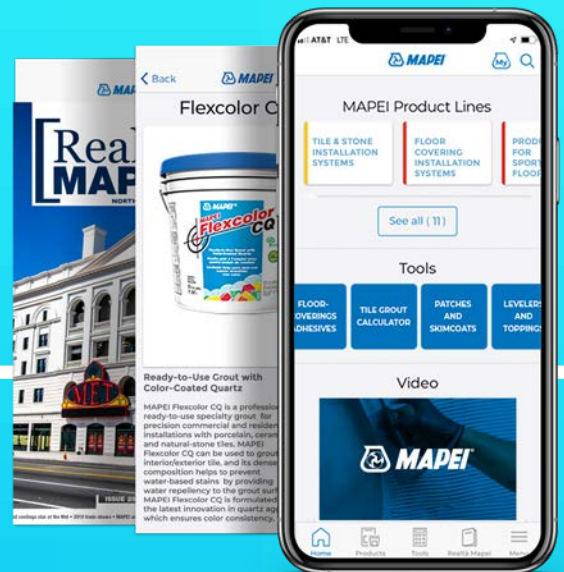
Our new companion app

Available for free download in the Apple App Store or Google Play, MAPEI's new app puts the power of MAPEI in the palm of your hand. The solutions to a wide range of problems are just a click away.

Simply uninstall your existing MAPEI app and install the new MAPEI app to stay current with the latest information from MAPEI including:

- Technical Data Sheets for all of MAPEI's extensive product lines.
- System Solutions showing complete building projects and all the products necessary for success.
- Technical documents, including technical bulletins, brochures and catalogs.
- Links to MAPEI's extensive video library of product spotlights, MTI-TV episodes and more.
- All of MAPEI's 11 product calculators to help you estimate how much product you'll need.
- A "Where to Buy" section that lets you find the closest distributor to you.
- *Realta MAPEI North America* magazine, for keeping up-to-date with industry information, product technology and MAPEI news.

The old app is no longer being updated. Be sure to uninstall your existing app and install the MAPEI's new app to bring all of MAPEI's vast technical resources to your phone.



RESILIENT FOR WET WALLS

New technology takes the benefits of LVT/LVP installation to walls and showers

Luxury vinyl tile (LVT) and luxury vinyl plank (LVP) flooring have changed the flooring world in many positive ways. To start, the simple portability of the flooring makes it easy to transport from the factory to the jobsite. Next is the fairly straightforward installation method that only requires a utility knife to cut individual planks to length. Finally, the attachment methods are also straightforward: Either click pieces together in a floating floor system or use a simple pressure-sensitive adhesive bonding process for a finished look.

The other aspect of LVT/LVP that we need to consider is that due to state-of-the-art printing, visual creations are becoming more advanced daily. I can't tell you how many times I have looked at a floor and actually had to get down on my knees and touch it to see if it was wood, tile or LVT/LVP. The visuals are simply stunning, and the marketing effort behind these flooring products is making it something people actually ask for as an upgrade.

Lastly, most if not all LVT/LVP products are made from some form of plastic, making them virtually waterproof. Whether it is PVC, polyolefin, solid rigid core (SRC) or wood-plastic composites (WPC), "waterproof" or "water-resistant" is the name of the game. No wonder people are trying to figure out ways to use this attractive material in areas of their homes other than just on the floor. I have had numerous requests for installation suggestions for LVT/LVP on walls and even ceilings.

But with all the benefits of LVT/LVP, why stop with walls and ceilings? How about wet environments such as shower enclosures and tub surrounds? Crazy, you say? Thanks to new installation materials, this can be a reality.



Benefits of using LVT/LVP in wet environments

Products used to install LVT/LVP in wet environments are all provided to you premixed and ready to go. There is no mixing of powder into water. This means there is no pot life to worry about. There is also no mess from dust when it comes to installing LVT/LVP in wet environments (or any environment for that matter).

Another benefit of this type of installation comes when you are doing retrofit installations. Traditionally, putting new tile over existing tile adds significant weight and thickness over the existing material. Depending on the tile and installation method, this can add as much as 3/8" to 1/2" (10 to 12 mm) of additional thickness to the walls. Using LVT/LVP, the maximum thickness build is typically less than 1/8" (3 mm).

Another great advantage of LVT/LVP in any application or environment is the ability to combine multiple visuals and have them all at the same thickness. Think about it. If you want to combine wood and stone, you are going to have to make sure that they all come out at the same level when you install them. For example, combining 3/4" (19 mm) solid prefinished wood flooring with a 1/2" (12 mm) thick piece of marble means that the marble must be lifted up 1/4" (6 mm) to be level with the wood. With LVT/LVP, that wood visual matches up perfectly with the stone visual without having to deal with thickness variations, because they all start at 2 mm or 5 mm in thickness.

Finally, let's look at what LVT/LVP is made of and why it is perfectly suitable for wet environments. In general, most LVT/LVP is PVC-based. There are also many non-PVC types of LVT/LVP available, but the general conclusion is that they are made of plastic-based materials and, as such, are extremely water-resistant. In comparing the composition of LVT/LVP to other flooring choices, such as wood and tile, the differences are obvious. Wood, for example, is definitely not waterproof and is extremely sensitive to moisture in any form. Putting wood materials in a wet environment would hardly be considered prudent. Tile and stone are more common materials that would be used in wet environments, but stone types that can absorb moisture and stains are suitable for this application.



Installation steps for LVT/LVP

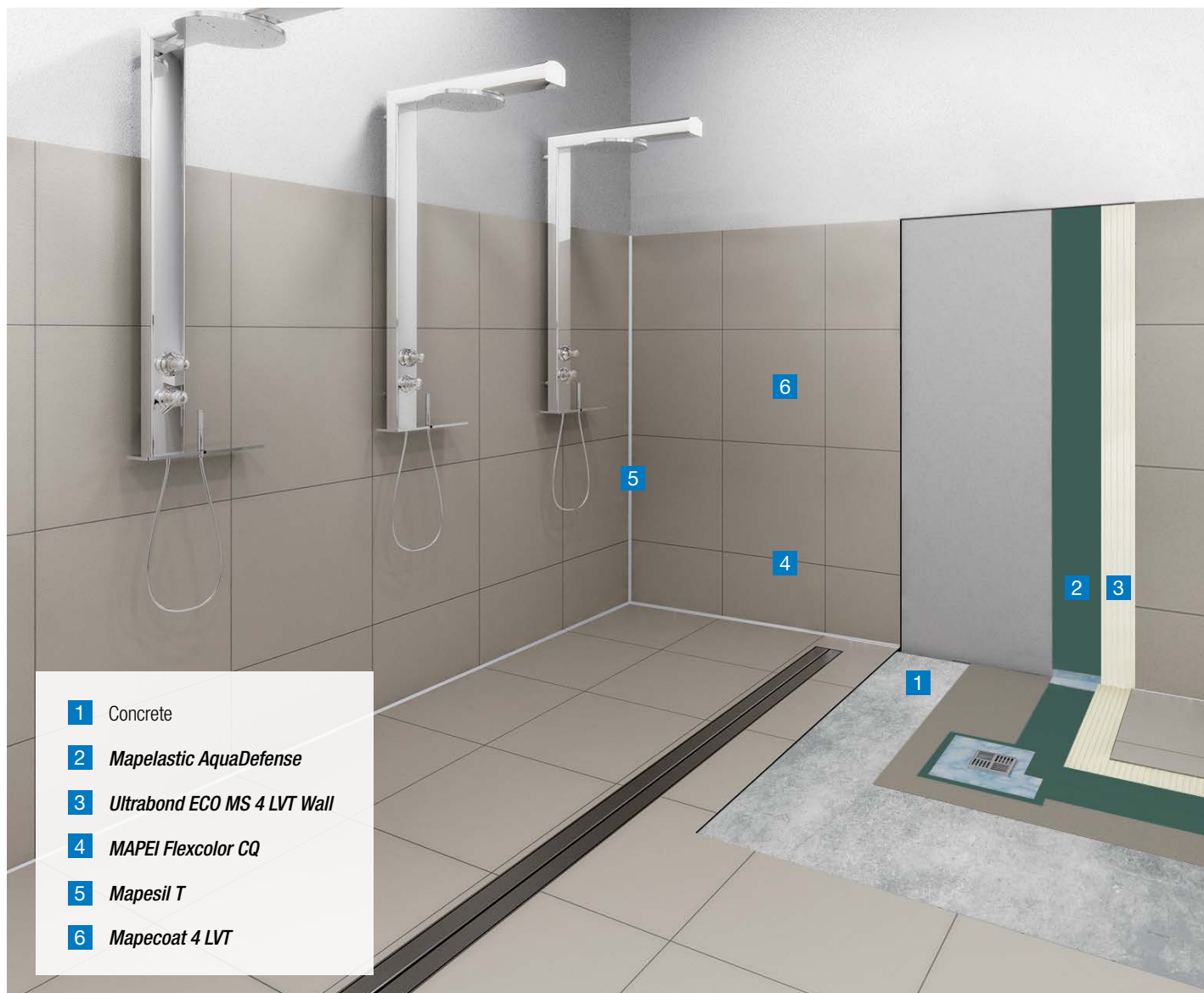
The installation of LVT/LVP in wet environments starts off similarly to tile projects, with the proper placement of a waterproofing membrane over the entire surface. The surface can virtually be anything ranging from cement boards to waterproof boards to drywall.

The critical success factor is 100% compliance in the installation of the waterproofing membrane. This is no different than what you would expect for tile installations, so it is crucial to make sure to follow this step according to all written instructions on Technical Data Sheets and installation guides. There are several types of waterproofing membranes available from multipart cement-based to fabric membranes to roll-on coatings, and all will work for LVT/LVP installations. MAPEI recommends the use of **Mapelastic® AquaDefense** for this application primarily because it is easy to apply, dries quickly and works exceedingly well.

The next step is one that is specific for resilient material being installed: Make sure the surface is very smooth and flat. If tile were being installed, you could deal with substrate defects with the mortar bed being used. But for resilient flooring materials, you must make sure the surface is smooth and flat, otherwise those defects will telegraph through to the final finish. For this, you will need a special smoothing compound that will bond tenaciously to nonporous substrates, dry quickly and be waterproof when dry. This is exactly what **Planiprep™ 4 LVT** is: A one-component, premixed skimcoating compound that applies very easily, dries quickly, sands to a super smooth surface and is waterproof when dry.

Next comes the installation of the LVT/LVP on the vertical surface. For this, you will need a special waterproof adhesive to apply a nonporous material (LVT/LVP) over a nonporous substrate. **Ultrabond ECO® MS 4 LVT Wall** fits all those requirements. As a modified-silane-based, 100%-solids adhesive designed to install LVT/LVP of all sizes in vertical applications, it has the proper thixotropy to hold these materials on the wall without slippage. **Ultrabond ECO MS 4 LVT Wall** cures fairly quickly and is ready for the next installation steps in about 6 to 12 hours after installation.





- 1 Concrete
- 2 *Mapelastic AquaDefense*
- 3 *Ultrabond ECO MS 4 LVT Wall*
- 4 *MAPEI Flexcolor CQ*
- 5 *Mapesil T*
- 6 *Mapecoat 4 LVT*

Depending on the desired finished look, you may choose to use tile spacers when placing the LVT/LVP to leave an area for grouting, or you can simply butt the pieces of LVT/LVP tightly together. Grouting is not a requirement for this system and is purely an option based on personal preference. If grout lines are desired, then the only requirement is to use a resin-based grout such as **MAPEI Flexcolor® CQ** or **Kerapoxy® CQ**. The use of cement-based grouts is not recommended. For easiest installation, **MAPEI Flexcolor CQ** wins the day in that it is premixed and ready to use, although it will require about 12 to 24 hours of curing time before the final step in the process. This wait time can be shortened with the use of **Kerapoxy CQ** epoxy grout, which can reduce the cure time to 4 to 6 hours, but epoxy grouts are not for the faint of heart to use.

The final step – and perhaps the most important one – is the application of a sealer and non-slip coating onto the LVT/LVP. This step is accomplished with MAPEI’s **Mapecoat™ 4 LVT**, a two-part, aliphatic, non-yellowing isocyanate-based coating that seals all the joints as well as adds much needed traction for floors. Most LVT/LVP is not designed to be used per se in wet environments and that is why the non-slip coating is so important to this process. **Mapecoat 4 LVT** is simply mixed together and applied using a 1/4" (6 mm) nap roller to all surfaces.

Once **Mapecoat 4 LVT** is applied and allowed to cure for 24 hours, the installation is almost ready for water exposure. For complete waterproofing protection, finishing details can be handled by using **Mapesil™ T** in all the corners and plane changes.

In summary, MAPEI offers an innovative system of products to enable the secure installation of LVT/LVP in virtually all environments, especially in those that will be exposed to water such as tub surrounds and shower enclosures.



About the author:

Jeffrey B. Johnson

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

Planiprep™ 4 LVT

Ready-to-use grout smoother for LVT

Planiprep 4 LVT is a ready-to-use grout smoother designed for use with luxury vinyl tile (LVT).

Planiprep 4 LVT is used to level off and smooth over (down to a featheredge and in layers up to 5/64" [2 mm] thick) existing interior ceramic and stone surfaces. It fills the joints between the tiles and forms a fine-textured, smooth finish suitable for the quick (after 2 hours) installation of LVT tiles and planks.

Features and Benefits

- Hardens very quickly without shrinking, creating a strong bond to tile and grout surfaces
- May be used to level off down to a featheredge without applying an adhesion promoter
- Creates a very smooth, fine-textured finish, particularly suitable for LVT flooring
- Non-hazardous with very low emission of volatile organic compounds

Uses

- For loose-lay LVT bonded with a tackifier, such as *Ultrabond Eco Tack 4 LVT*
- For loose-lay, click-connecting LVT
- For loose-lay self-adhesive or "tack-dry" LVT
- For LVT to be bonded with reactive adhesives (for example, *Ultrabond® ECO MS 4 LVT* or *Ultrabond ECO MS 4 LVT Wall*)
- For leveling and grouting different types of substrates and boards (such as wood, gypsum, fiber cement, etc.)

See full product details at www.mapei.com.



Technical Data (typical values)

Product Identity	
Consistency:	thick paste
Color:	white
Bulk density (kg/m³):	1.65
EMICODE:	EC1 Plus - very low emission

Application Data (at +23°C and 50% R.H.)

Application temperature:	+5°C to +35°C
Set to light foot traffic:	approx. 1 hour
Waiting time before sanding and bonding LVT:	2 hours

GREAT FOR GPT

Ultrabond ECO® GPT hybrid adhesive is an evolution in GPT wall installations



Any installation or specification professional who works around gauged porcelain tile (GPT) panels and slab products knows that these gargantuan panels of porcelain tile require extra care and consideration when being handled and installed.

It's important to note is that there are American National Standards Institute (ANSI) specification standards dedicated to this particular type of tile and its proper installation, found in the manual "Specifications for Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs – Material and Installation Standards." Available from the Tile Council of North America (TCNA), this manual includes the ANSI A137.3 material standard ("American National Standard Specifications for Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs"), which details the minimum physical properties of the material. The manual also provides the ANSI A108.19 installation standard ("Interior Installation of Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs by the Thin-Bed Method"), which addresses installation methods, storage and transportation for the tile panels/slabs.

In this manual, a statement stands out in relation to the setting materials needed for installation: "NOTE: Not all ANSI A118.4 and ANSI A118.15 modified dry-set mortars are suitable for installing

these [GPT] products. It is the responsibility of the specification writer and the installer to confirm with the tile and setting material manufacturers the use of required setting materials, method, and cure times." That is to say, you cannot simply use any polymer-modified cement mortar for these types of panels and slabs.

MAPEI has historically recommended our **MAPEI Ultralite™ S2**, **Ultraflex™ LFT™** or **Kerapoxy® 410** in our GPT-related literature, all of which can be found online in our technical library. These mortars are more than fit for the job of installing GPT panels and slabs, as they each bring their own benefit to the table. Yet, in the ever-growing world of GPT panels and slabs, a request that MAPEI often gets is how to simplify installation and make it easier on the installer.

Enter **Ultrabond ECO GPT**, our newest setting material for the ever expanding world of gauged porcelain tile panels and slabs. Specifically designed for vertical applications, this hybrid-polymer-based adhesive is a direct result of these requests, as well as numerous roundtable sessions with all parties involved in the design, manufacturing, specification and installation of GPT panels and slabs.



Take a look at the multiple benefits that *Ultrabond ECO GPT* brings to the jobsite:

- Single-component adhesive
- Non-sag performance with GPT panels
- Ready-to-use, with no mixing required
- Smooth, easy-to-trowel consistency
- Superior transfer that promotes full coverage for tile panels, reducing or eliminating the need to back-butter
- Extended open time of 30 minutes
- Adjustability time of 30 minutes
- High bond strength and deformability
- Remains flexible without sacrificing durability
- Instant grab and holding power
- Troweled only on the backs of tile, saving you time and money
- Moisture-cure technology
- Easy to clean off tile surface in a wet or dried state
- Bonds to tile with urethane/epoxy fiberglass mesh backing
- Bonds to porous and nonporous substrates
- Reduced product waste because the exact amount of product needed can be used

We all know time is money. *Ultrabond ECO GPT* comes ready to use, so a considerable amount of time is saved by eliminating the entire water-measuring and mixing process. With nearly all cement mortars, the installer is required to mix for several minutes,

let the product sit/slake, and then mix again for another couple of minutes. Considering the amount of time it takes to fetch and measure water, go through the steps of mixing, clean each bucket out after use, and transport the material from the mixing area to the installation area, having a premixed product will easily save hours in a day on a large job. Plus, with only applying to the back of the tile and not the substrate, installers can spend less time spreading mortar, can spend more time installing panels and can start on the next job quicker.

Premixed adhesives most certainly have their advantages over bagged cement products on a jobsite. Because this material comes in a resealable pail, you can spread only as much as you need for the area being worked on, close the lid and set the adhesive aside. What happens when you mix a full bag of cement mortar and are unable to use it within the given pot life? It goes in the trash, along with (if you wait too long) your mixing bucket. Jobsite storage is another benefit of premixed adhesives. Plastic pails are arguably more durable for stacking than bags full of powder. Not to mention without the need to mix, you are not introducing any respirable silica into the air as can be the case with some cement products during the mixing process.

Once the panel hits the wall, the supreme adjustability of *Ultrabond ECO GPT* makes the installer's life much easier. With most cement

MAPEI's mortars for installing gauged porcelain tile





mortars, once the tile is up on the wall, it can take some real effort to slide and move the panel into its final resting place. When we talk in terms of flexibility and deformability, setting material manufacturers have historically been limited by the rigidity of cement materials. That limitation pushed MAPEI to explore other avenues in adhesive technology as tiles grow larger and are set in increasingly challenging scenarios requiring the utmost flexibility. As a hybrid-polymer-based adhesive, rather than a polymer-modified cement, *Ultrabond ECO GPT* clears the adjustability hurdles that come with using cement mortars.

Where and when is *Ultrabond ECO GPT* the right choice? Here are the recommended areas of use:

- Most interior installations on walls and countertops
- Residential wall and countertop applications
- Light commercial wall applications
- Commercial wall applications
- Approved for interior wet and dry areas
- Installation of most types and sizes of gauged porcelain tile panels/slabs on walls/countertops
- Installations of large-format ceramic and porcelain tile on walls and countertops

Unique technological advancements are incorporated in the formulation of *Ultrabond ECO GPT*, delivering instant grab while allowing for the needed adjustability of panels and large-format tile. Superior bonding performance is complemented with flexibility, deformability and quick-curing characteristics to meet the demands of installing large porcelain panels.

It is important to note that this product will not replace cement mortars altogether. *Ultrabond ECO GPT* is designed for interior wall and countertop applications. Floor installations, exterior installations and certain other applications will still necessitate a cement or epoxy product. *Ultrabond ECO GPT* is meant to be an added weapon in your arsenal to combat the increased labor and subsequent costs associated with the installation of gauged porcelain tile panels and slabs.

If you ever have questions regarding where and when you use this or any MAPEI product, feel welcome to reach out to your local MAPEI representative or our Technical Product Support team at 1-800-992-6273 (USA and Puerto Rico) or 1-800-361-9309 (Canada).



About the author:
Holden Wheeler

Holden serves as a Regional Technical Services Representative for the South Central United States. As a local representative for MAPEI's U.S. Technical Services Department, he acts as a technical liaison between distributors, end users, product management, R&D and sales representatives. In addition to being a third-generation flooring installer, Holden draws upon years of experience in building material distribution, installation management and firsthand MAPEI product knowledge with a specialty in tile and stone products, as well as MAPEI's *UltraCare*™ line of care and maintenance products.

INTERIOR

LARGE GAUGED PORCELAIN TILE PANELS/SLABS, TILE OVER TILE, INTERIOR WALLS/FLOORS

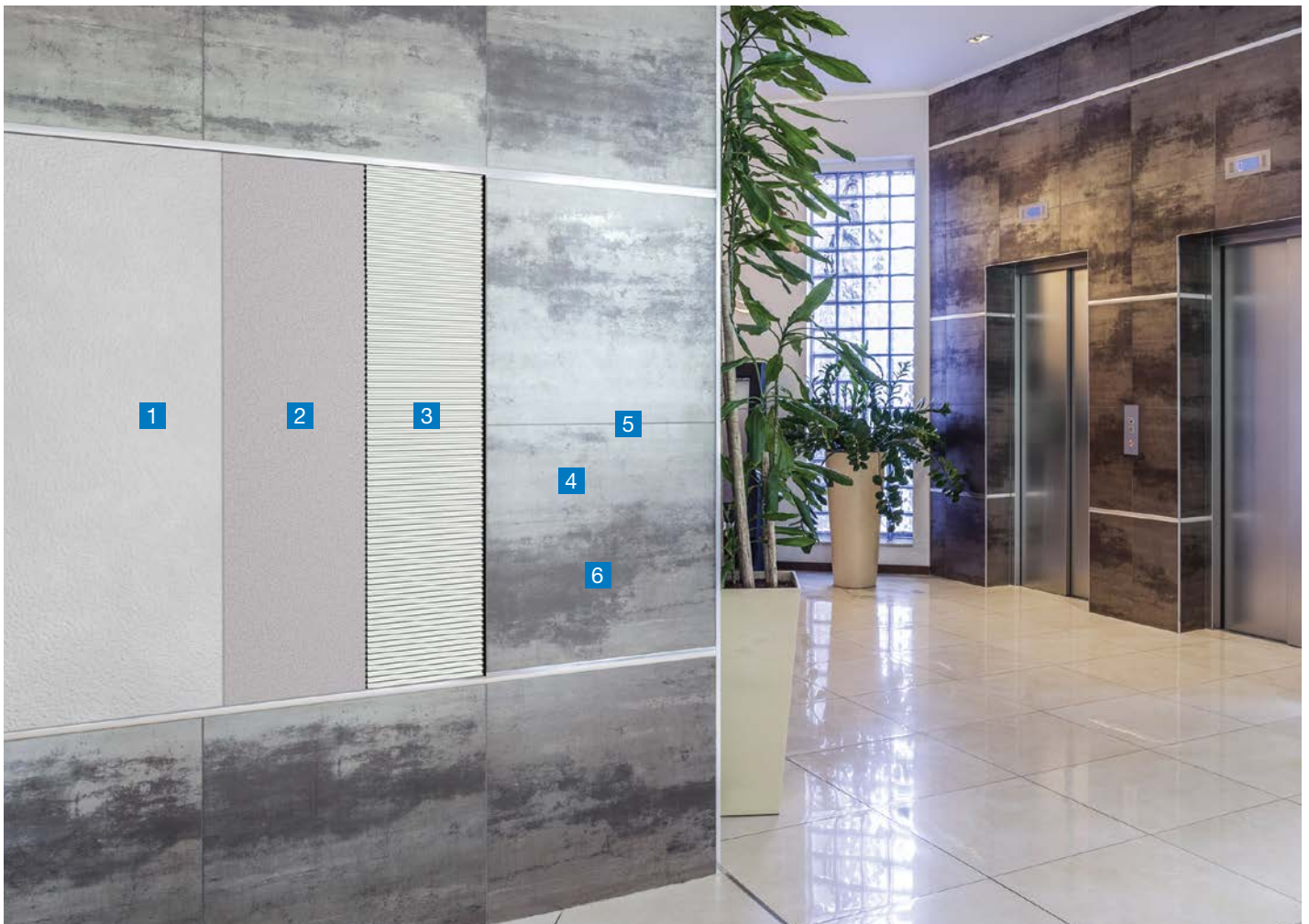
TILE OR STONE

- 1 Existing tile
- 2 *ECO Prim Grip™*
- 3 *MAPEI Ultralite™ S2*
- 4 Gauged porcelain tile panels/slabs
- 5 *Ultracolor® Plus FA*
- 6 *UltraCare™ Penetrating Plus SB Stone & Porcelain Tile Sealer; UltraCare Penetrating SB Stone, Tile & Grout Sealer; or UltraCare Penetrating Plus Stone, Tile & Grout Sealer*

In this large emerging segment of the tile industry, very thin tiles often are used to cover existing tiles. This solution makes renovation quick and cost-effective, but it brings up the challenges of fully supporting the tiles with mortar. MAPEI is the worldwide leader in innovative solutions for gauged porcelain tile and gauged porcelain tile panels/slabs.

Challenges: Dated tile or stone, cost of removal, mortars designed for full coverage

Solutions: Tile over tile, low cost



TILE TRENDS MEET HIGH-TRANSFER TECHNOLOGY™

MAPEI's High-Transfer Technology
tames massive tile formats



Over the past decade, tile trends have drastically changed in style, texture, color variation and, most importantly, size. Large-format tile is the biggest continuing trend of 2020, going strong into 2021 – from 24" x 48" (61 x 122 cm) mega tiles to 118" (300 cm) long porcelain panels. It's easy to see why this style is so popular: Installing these massive tiles means fewer grout lines, which allows for a seamless transition across the surface and creates a sleek/modern space. This is true for floors, walls and countertops alike in residential kitchens, bathrooms and living spaces, as well as large commercial projects with high-traffic areas like shopping malls, hotels and restaurants.

To meet the high demands of these new tile styles, MAPEI introduced the *Keraflex*™ family of mortars: ***Keraflex Super***, ***Keraflex Plus***, ***Keraflex SG*** and ***Keraflex RS***. These highly versatile mortars are ideal for large and heavy tiles, including ceramic, porcelain and gauged tile. "The introduction of the *Keraflex* mortar series offers the advantage of consolidation, simplification and versatility to the distributor, retailer and contractor, allowing the opportunity to streamline their mortar selection offering," said Brian Pistulka, MAPEI's Business Manager for Tile & Stone Installation Systems.

The ever-evolving tile industry requires revolutionary products with exceptional quality and tangible benefits for installers. The *Keraflex* family was developed to address changes in the tile types and sizes as well as substrate requirements in previous eras. Plus, the *Keraflex* mortars are installer-friendly, offer flexibility and multi-functionality, and are purposefully designed to meet specific jobsite needs.

These mortars are formulated with Easy Glide Technology™ for extreme ease of application (reducing fatigue during installation) and with a consistency that allows adjustability when used with lippage control systems. They can also be used over uncoupling, crack-isolation, sound-reduction and waterproofing membranes. Each mortar features MAPEI's High-Transfer Technology, providing maximum coverage for high-bond adhesion strength.

Keraflex Super is a premium polymer-modified mortar with enhanced resistance to freeze/thaw environments. *Keraflex Super* can also be used as a mortar over uncoupling, crack-isolation, sound-reduction and waterproofing membranes.

Keraflex Plus is a professional, extra smooth, highly versatile, polymer-modified mortar. It is formulated as non-sag for walls and nonslump for floors.

Keraflex SG is a standard-grade, versatile, polymer-modified mortar.

Keraflex RS is a professional, rapid-setting, highly versatile, polymer-modified mortar. *Keraflex RS* allows tiles to be grouted within 3 to 4 hours after installation.

Features of the *Keraflex* family include:

- High-Transfer Technology with impressive non-sag/nonslump properties along with high bond adhesion strength – perfect for large and heavy tiles
- Easy to trowel, which requires 70% less effort and reduces application times
- For bond coats up to 1/2" (12 mm) in embedded thickness
- Superior mortar-wetting properties
- Water and frost resistance
- Ideal for use with edge-leveling clip applications
- Easy to mix: Products blend quickly and easily to a lump-free consistency
- Easy to trowel, with a buttery texture that requires much less effort

"The working features, product application and performance attributes of the *Keraflex* mortars combine and enhance the individual strengths of the different technologies of polymer-modified mortars and large-and-heavy-tile mortars currently on the market," Pistulka added. "The contractor-friendly application properties of this unique mortar product line will delight your customers and provide an opportunity to grow your business with a loyal following of *Keraflex* believers."



Because seeing is believing, the *Keraflex* family hit the road in the autumn season for the #KeraflexRoadTour to bring over 250 demo/training events to more than 160 cities, with 109+ customers visited across 43 U.S. states. The nine-week tour included a social media contest on Facebook, Twitter, LinkedIn and Instagram featuring the specially wrapped *Keraflex* vans. The contest invited anyone who sees the van to snap a picture and tag us on to be eligible to win MAPEI giveaways. As with any good roadtrip, the recapped journey is documented and can be seen in videos on the MAPEIUSA YouTube channel.



Distinguishing Features of *Keraflex* Mortars

Substrates	<i>Keraflex Super</i>	<i>Keraflex Plus</i>	<i>Keraflex SG</i>	<i>Keraflex RS</i>
Concrete, cement block, brick, mortar beds, leveling coats, cement backer units, gypsum wallboard/plaster and plywood	•	•	•	•
VCT, sheet vinyl and cutback residue	•	•		•
Ceramic/porcelain/quarry tile and pavers	•	•		•
Uncoupling, waterproofing, crack-isolation and sound-reduction membranes	•	•	•	•

Uses	<i>Keraflex Super</i>	<i>Keraflex Plus</i>	<i>Keraflex SG</i>	<i>Keraflex RS</i>
Exterior building facades	•			
Interior/exterior submerged applications	•			•
Over infloor heating systems	•	•		•

Application Properties	<i>Keraflex Super</i>	<i>Keraflex Plus</i>	<i>Keraflex SG</i>	<i>Keraflex RS</i>
Open time	35 to 45 minutes	30 minutes	30 minutes	10 to 20 minutes
Pot life	4 hours	3 hours	> 2 hours	30 minutes

ISO 13007 Classifications	<i>Keraflex Super</i>	<i>Keraflex Plus</i>	<i>Keraflex SG</i>	<i>Keraflex RS</i>
	C2TES1P1	C2TE	C2TE	C2TF

ANSI Specifications	<i>Keraflex Super</i>	<i>Keraflex Plus</i>	<i>Keraflex SG</i>	<i>Keraflex RS</i>
	A118.4HTE, A118.11 and A118.15HTE	A118.4HTE and A118.11	A118.4HTE and A118.11	A118.4HTF and A118.11
ANSI shear strength, impervious tile	425 to 550 psi (2.93 to 3.79 MPa)	220 to 340 psi (1.52 to 2.34 MPa)	200 to 300 psi (1.38 to 2.07 MPa)	350 to 450 psi (2.41 to 3.10 MPa)
ANSI shear strength, glazed wall tile	450 to 550 psi (3.10 to 3.79 MPa)	395 to 540 psi (2.72 to 3.72 MPa)	325 to 440 psi (2.24 to 3.03 MPa)	400 to 500 psi (2.76 to 3.45 MPa)
ANSI shear strength, quarry tile to quarry tile	400 to 550 psi (2.76 to 3.79 MPa)	295 to 415 psi (2.03 to 3.86 MPa)	275 to 400 psi (1.90 to 2.76 MPa)	275 to 400 psi (1.90 to 2.76 MPa)
ANSI shear strength, quarry tile to plywood	200 to 275 psi (1.38 to 1.90 MPa)	> 150 psi (1.03 MPa)	> 150 psi (1.03 MPa)	150 to 200 psi (1.03 to 1.38 MPa)
ANSI H designation (large and heavy tile): Lippage change < 1/64" (0.4 mm)	•	•	•	•
ANSI T designation (sag on vertical surfaces): ≤ 0.02" (0.5 mm) at 20 minutes	•	•	•	•
ANSI E designation (extended open time): ≥ 72.5 psi (0.5 MPa) at 30 minutes	•	•	•	
ANSI F designation (impervious tile): > 50 psi (0.3 MPa)				•

Protection	<i>Keraflex Super</i>	<i>Keraflex Plus</i>	<i>Keraflex SG</i>	<i>Keraflex RS</i>
Before grouting walls	8 to 16 hours	8 to 16 hours	16 hours	3 hours
Before grouting floors	24 hours	24 hours	24 hours	3 hours
Foot traffic	24 to 48 hours	24 to 48 hours	24 to 48 hours	6 hours
Heavy traffic	7 days	7 days	7 days	24 hours

Coverage	<i>Keraflex Super</i>	<i>Keraflex Plus</i>	<i>Keraflex SG</i>	<i>Keraflex RS</i>
1/4" x 1/4" x 1/4" (6 x 6 x 6 mm) square-notch trowel	115 sq. ft. (10.7 m ²)	90 sq. ft. (8.36 m ²)	86 sq. ft. (7.99 m ²)	91 sq. ft. (8.45 m ²)
1/2" x 1/2" x 1/2" (12 x 12 x 12 mm) square-notch trowel	58 sq. ft. (5.39 m ²)	45 sq. ft. (4.18 m ²)	43 sq. ft. (3.99 m ²)	48 sq. ft. (4.46 m ²)

For more information about the *Keraflex* family of mortars, visit <https://www.mapei.com/us/en-us/products-and-solutions/in-the-spotlight/keraflex-mortars>.



Keraflex

MORTARS with
High-Transfer Technology

MAPEI's *Keraflex* family of polymer-enhanced mortars incorporates High-Transfer Technology to provide outstanding transfer of mortar to tile backs — while retaining impressive non-sag/nonslump properties. Three additional mortars have joined **Keraflex Super** to provide additional options for all of your jobsite needs: **Keraflex Plus**, **Keraflex RS**, and **Keraflex SG**. Properties of this extra smooth mortar family include:

- Easy-to-trowel, requiring 70% less effort — which reduces application times
- Water and frost resistance (*Keraflex Super* is highly resistant to freeze/thaw conditions)
- Quick-curing (*Keraflex RS* allows tiles to be grouted within 3 to 4 hours)
- Ideal for use with edge-leveling clip applications
- High bond adhesion strength perfect for large and heavy tiles

Designed for interior/exterior use on floors and walls, over plywood and over a variety of membranes, this powerful mortar family has your tile back covered. For details on the *Keraflex* line, visit www.mapei.com.





TAKE CARE

UltraCare™ products keep tile/stone/grout clean and beautiful

MAPEI introduced *UltraCare* Stone, Tile & Grout Care Solutions at Surfaces 2013 in Las Vegas and hasn't looked back since. MAPEI is known for all things underneath and in between stone and tile installations. So with *UltraCare*, MAPEI entered into the care and maintenance world of all things on top of tile, stone and grout.

The line was developed to be high-performance, user-friendly and cost-competitive. MAPEI is proud to own the chemistry of this line, allowing for complete control of the entire production process. From the purchasing of raw materials, to the blending, packaging and shipping procedures, MAPEI is intricately involved every step of the way. All *UltraCare* products are made and packaged in our plant in Garland, TX, and then shipped on MAPEI trucks to be stocked in each of our six U.S. facilities. This strategic stocking greatly improves logistics by getting the product to the distributors faster. MAPEI's Technical Services team provides product support to customers, and our national sales and architectural teams provide sales and specification support to the distributors, contractors and dealers.

The *UltraCare* line offers 23 products that encompass four categories: Sealers, Cleaners, Finishes and Problem-Solvers. Each category is packed with high-performance, easy-to-use products that get results.

Problem-Solvers

The products within the Problem-Solvers category consist of:

- **Grout Release**, a sacrificial coating that protects the tile from grout stains and reduces the risk of grout haze.
- **Epoxy Grout Haze Remover**, made to safely remove tough epoxy grout haze, without the harmful or toxic effects of other products.
- **Heavy-Duty Sealer & Coating Stripper**, the "big brother" to the Epoxy Grout Haze Remover. It is made to safely remove latex-based paint, urethane finishes, adhesives and epoxy residue.
- **Cement Grout Haze Remover**, which works effectively on all cement-based grout haze, as well as removing mortar residue.
- **Sulfamic Acid Crystals**, which removes efflorescence, cement-based grout haze and mineral deposits.
- **Grout Refresh**™, which color-seals grout and is available in 40 MAPEI grout colors.

"The Problem-Solvers category is a great foot in the door," said Dave Mowery, Business Manager, TSIS Color Products & *UltraCare*. "When you start solving problems, you start making friends. Once the contractor uses the products and sees that they work and, more importantly, how they got him out of a jam, they become a customer for life. That's the beginning of a great relationship."





Sealers

The Sealers category is composed of several penetrating/impregnating sealers that produce a natural, unchanged appearance to the surface. They also are vapor-permeable, allowing water to “breathe” out of the surface while remaining water-repellant, and are available in both water- and oil-based options.

- **Penetrating Stone, Tile & Grout Sealer** is water-based and offers standard protection that repels dirt and beverages.
- **Penetrating SB Stone, Tile & Grout Sealer** is solvent-based and is made to penetrate deep into dense surfaces, protecting against staining from both water and oil-based contaminants. Both products have a five-year wear rating.
- **Penetrating Plus Stone, Tile & Grout Sealer** offers premium water-based protection that repels staining caused by both water and oil-based contaminants.
- **Penetrating Plus SB Stone & Porcelain Tile Sealer** is a VOC-compliant, solvent-based sealer for use on dense surfaces. Both have a 15-year expected wear rating.
- **Enhancing Stone Sealer** and **Enhancing Plus Stone Sealer** provide high-performance protection and deep color enhancement to stone and grout. Both enhancers are solvent-based and 100% VOC-compliant.
- **Grout Maximizer**, a liquid polymer additive for sanded and unsanded grout mixtures, optimizes resistance to water and oil-based stains.
- **Grout Sealer** is a water-based penetrating sealer designed to protect against most common stains on sanded and unsanded grout.

Finishes

The Finishes category consists of **High-Gloss Sealer & Finish** and **Low-Sheen Sealer & Finish**. Along with sealing and protecting the surface, both products can provide a change in surface sheen. Plus, they produce a scuff- and mar-resistant finish that is easily maintained.

Cleaners

The Cleaners category offers a variety of cleaning products:

- **Concentrated Tile & Grout Cleaner** is a highly concentrated, neutral cleaner for daily maintenance and cleaning of natural stone, tile and grout. Plus, it won't harm the protective sealer.
- Three products – **Everyday Stone, Tile & Grout Cleaner**; **Everyday Stone, Tile & Grout Cleaner & Resealer**; and **Everyday Stone Clean & Polish** – are great for maintaining natural stone and quartz countertops, tile backsplashes and grout.

- **Heavy-Duty Stone, Tile & Grout Cleaner** is a highly concentrated, alkaline cleaner and degreaser. It's made to quickly dissolve organic soiling, such as dirt, grease and oil. It is safe for use on all, ceramic and porcelain tile, grouts and natural stone, including polished marble. Also, it removes cement grout haze, acrylic and urethane grout residue, and synthetic floor finishes.
- **Abrasive Surface Cleaner** doesn't require any dwell time and uses mild abrasive qualities to remove ground-in dirt, grime, rust stains, mineral deposits and light grout haze from ceramic tile, porcelain tile and natural stone surfaces. Abrasive Surface Cleaner can work in combination with Heavy-Duty Stone, Tile & Grout Cleaner to provide the “one-two punch” of a powerful, alkaline cleaner with added abrasive qualities. Excellent for use on heavily textured and hard-to-clean surfaces, it removes most factory-applied waxes and “transit coatings.”
- **Acidic Tile & Grout Cleaner** is a concentrated cleaner, made to safely remove cement grout haze, mortar residue, mineral deposits and efflorescence from tile and grout.

MAPEI's line of *UltraCare* products has quietly been making gains into wholesale distribution, retail and web presence, building a strong and loyal supply base. By offering high-performance products, combined with excellent representation and technical support, MAPEI has set the bar high for care and maintenance products for stone, tile and grout. Talk with your MAPEI sales representative today to find out more.



About the author:

Nick Valenti

Nick joined MAPEI in 2012 as the technical expert for the *UltraCare* line. He has been involved in the floor care and maintenance industry for more than 35 years, including 28 years as owner of a company that manufactured floor care and maintenance products. While his experience includes an in-depth knowledge of products, Nick also understands the major issues and problems that can arise with the surfaces to be protected and has solutions for these challenges. In charge of training MAPEI's sales and technical service teams, Nick is even more importantly the in-the-field resource for MAPEI's customers and end users.

Ultracolor® Plus Max

High-performance, rapid-setting grout with maximized color depth and color consistency

Ultracolor Plus Max is an ultra premium, fast-setting, polymer-modified, nonshrinking grout that offers rich and vibrant colors with maximized color depth and color consistency. This fine-aggregate grout can be used for joint widths from 1/16" to 3/4" (1.5 mm to 19 mm). *Ultracolor Plus Max* includes DropEffect™ technology for reduced surface absorption, helping to repel water, dirt and grime from penetrating grout joints.

Features and Benefits

- Maximized color depth
- Maximized color consistency
- Less water required when mixing and washing
- Easier workability and cleaning
- Fine aggregate for use in joint widths 1/16" to 3/4" (1.5 to 19 mm)
- Fortified with MAPEI's BioBlock® technology

Uses

- Interior/exterior commercial and residential installations
- For grouting dimensional stone, slate, granite, stone agglomerates and most types of ceramic, ceramic mosaic, quarry, brick paver, porcelain, glass and clay tiles
- Submerged installations such as swimming pools, spas, water features and fountains, after 72 hours of curing

See full product details at www.mapei.com.



ISO 13007 Classification

Classification Code	Test Characteristics	Classification Requirement
CG2 (cementitious grout, improved)	Shrinkage	< 3 mm/m shrinkage in 28 days
W (reduced water absorption)	Water absorption	≤ 5 g after 4 hours
A (high abrasion resistance)	Abrasion resistance	≤ 1 000 mm ³
F (rapid-setting)	Compressive strength	≥ 2,175 psi (15 MPa) after 24 hours

ANSI Specifications

Test Method	Specification Standard	Test Results
ANSI A118.7 – compression	3,000 psi (20.7 MPa) at 28 days	Meets or exceeds standard
ANSI A118.7 – shrinkage	< 0.20% at 27 days	Meets or exceeds standard
ANSI A118.7 – tensile strength	500 psi (3.45 MPa) at 28 days	Meets or exceeds standard
ANSI A118.7 – water absorption	< 5% (50% relative humidity to immersion)	Meets or exceeds standard
ANSI A118.7 – flexural strength	1,000 psi (6.90 MPa) at 28 days	Meets or exceeds standard

Shelf Life and Product Characteristics before mixing

Available colors	117 Pure White 118 Jet Black
Shelf life	1 year when stored in original, unopened packaging at 73°F (23°C) in a dry area
Physical state	Powder

Application Properties at 73°F (23°C) and 50% relative humidity

Mixing ratio	Per 10 lbs. (4.54 kg) of grout powder: 0.85 to 0.95 U.S. qts. (0.80 to 0.90 L) water
VOCs (Rule #1168 of California's SCAQMD)	0 g per L
Working time*	30 minutes to 1 hour
Application temperature range	50°F and 95°F (10°C and 35°C)
Curing time*	3 days

* Working time and curing time vary based on jobsite conditions, including cold temperatures or high humidity.

Packaging

Size
Bag: 10 lbs. (4.54 kg)

MAPEI's **Ultracolor® Plus FA** is the world's best-selling grout

We've sold enough
to circle the globe
17 times!*

Ultracolor Plus FA does it all. What makes it so successful?

- Fine-aggregate formulation makes this an all-in-one replacement, with no need for separate sanded or unsanded grouts
- Can be used on wide or narrow gap widths from 1/16" to 3/4"
- Can be used on scratch-sensitive natural stone as well as porcelain and ceramic tile
- Rapid-setting with no sealer required
- Efflorescence-free and color-consistent with easy cleanability and workability

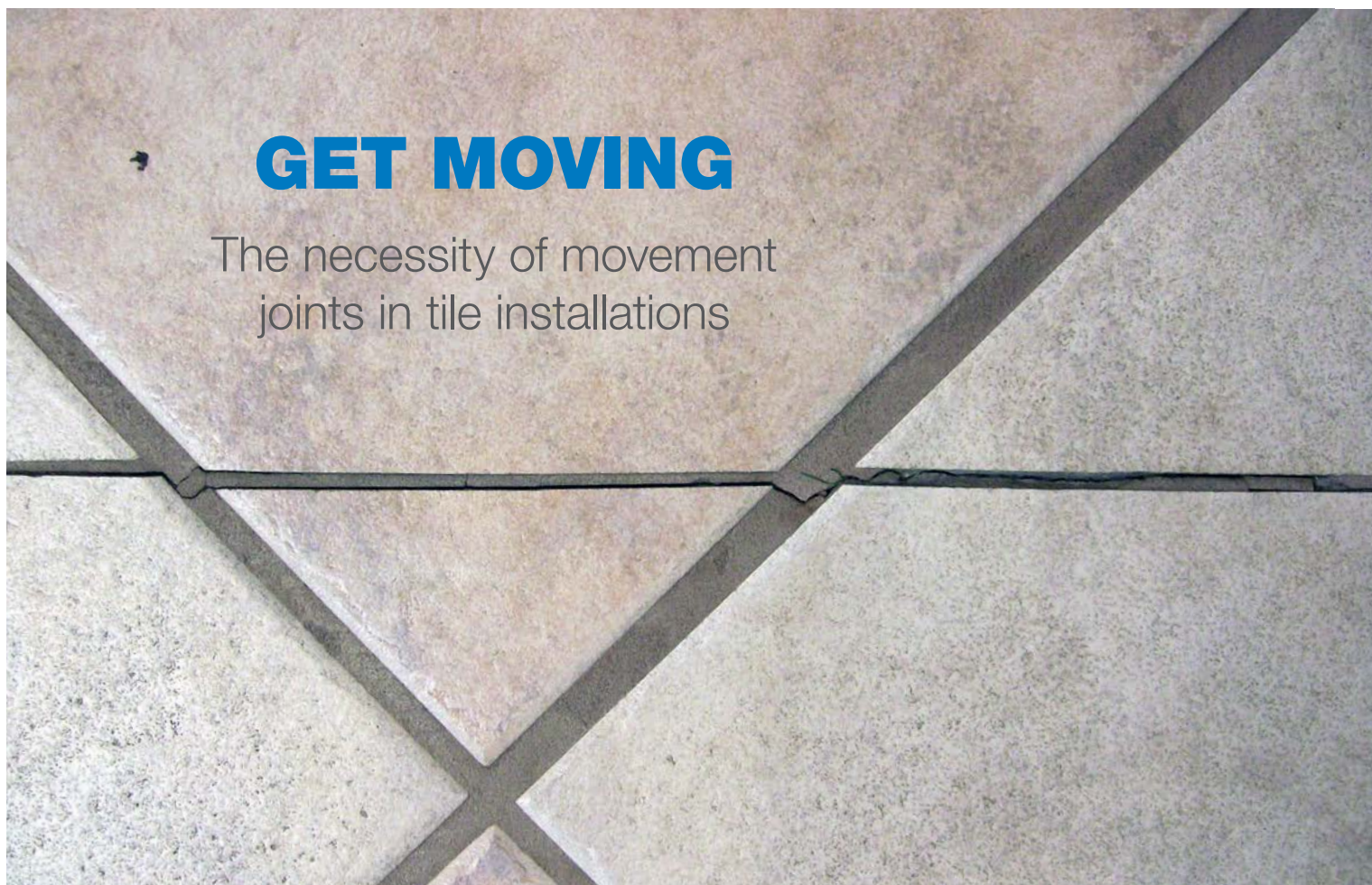
High-performing, easy and convenient, this truly is the best-selling grout on... and around... the planet.

For details on *Ultracolor Plus FA*, and our other cutting-edge products, visit www.mapei.com.



*17 times around the earth = 423,325 miles





GET MOVING

The necessity of movement joints in tile installations

Few topics in the tile industry can garner a collective groan from all interested parties more than movement joints. This likely stems from a fundamental misunderstanding of the forces in play and the possible effects on what seems like a simple, static installation. And honestly, I can understand, to a certain extent.

The flooring industry has grudgingly accepted the reality of allowing for movement in wood flooring installations as wood floors have repeatedly shown their explosive potential over the years. The combination of a living, breathing finished flooring material that expands and contracts due to the ambient conditions is an accepted, if not annoying, fact of life.

But tile? Baked clay or porcelain or a rock somebody cut into a geometric shape? Certainly, we don't need to worry about tiles? These were never towering timbers that grew from seedlings with water coursing through their veins to yield the fruits of life at the ends of their branches. No, we are talking about dried mud and rocks. I can understand how this may seem like an effort in sensationalism. Industry pundits dreaming up ways to make life more complicated for design professionals and installers alike. Certainly, the industry would never expect ordinary people to try and decipher something as complicated as

$$Wm=(L \times \Delta T \times a)/(S/100)$$

to determine how much movement to allow for in a tile installation?

You have probably guessed where I am going with this. That equation is real and pulled directly out of the Tile Council of North America (TCNA) Handbook. This handbook is often referred to as the "bible" of the tile industry. And just like the actual Bible, it can often be misquoted and misunderstood. The volume of information

available can be overwhelming if you don't know where to look or understand what information applies to your installation. (That is a topic all to itself and likely worthy of its own article.) However, here I am discussing a specific section of the handbook: EJ-171, which discusses movement joints. EJ-171 may sound more like the name of a droid in a "Star Wars" movie, but it is the name of the last method in the TCNA Handbook. All kidding aside, it is a poignant example of the old cliché, "last, but certainly not least."

Tile installation failures are rarely the result of a single factor. The old tile mantra of "the three G's... God, grout and gravity" has seen many questionable installs through the expected life of a floor. Occasionally, however, we see the consequences of not properly allowing for movement within the installation. When these failures occur and the verdict is read, EJ-171 is going to be the industry document cited every time.

The first sentence of the entire document drives home the most important point that we are hoping to learn, "Perimeter and field movement joints within a tile installation are essential and required." Honestly, if you remember nothing else from this article, please remember that statement. If you could also squeeze in one addendum to that thought, remember that you can find it in the back of the TCNA Handbook.

Now that we understand we must allow for movement in the installation, we can begin to dig deeper into how to do that. The first major concept that we need to grasp is that we are allowing for two different categories of movement: Movement of the tile itself, caused by thermal expansion and contraction, and movement that is related to the substrate/s. It is also important to note that while



this document does provide general guidelines for locations and frequency of these movement joints, it is ultimately the responsibility of the design professional or engineer to designate the locations for movement joints on project drawings. Unfortunately, this amount of detail in the project drawings is often missing, and it is incumbent on the tile installer to understand and communicate the need for the joints to be provided.

A joint by any other name

When we look at allowing for thermal expansion and contraction in a tile installation, we often hear movement joints referred to as “soft joints.” This is not a particularly technical term, but the most common joint you would think about in a tile installation would be a grout joint. The general expectation for a grout joint is that it will be rigid or “hard” and, if it is not, I usually receive a call wanting to know what is wrong with it. Many of the high-performance grouts that are used today have a compressive strength (or psi) much higher than the concrete on which the tile is installed. While that may serve well for the abrasion resistance of the grout joints, it does not allow for much movement in the tile installation.

A soft joint is a grout joint that is left clear down to the substrate. This is an important distinction, as a typical grout joint would have the adhesive mortar filling in the lower third of the joint. For a soft joint to perform appropriately, it cannot have any restraining materials present. Either a bond-breaking tape is placed at the bottom of the joint or a foam backer rod is forced down into the joint. This allows for the flexible sealant to bond to the two tiles, but not the substrate, essentially creating “islands” of tiles that can move independently.

The first section in the TCNA Handbook following the introduction to EJ-171 is titled “Location and Frequency of Joints.” This is convenient since we have already established the definition and importance of the field movement joints, so the next step is knowing where to put them.

Perimeter joints are defined as “movement joints where tilework abuts restraining surfaces such as perimeter walls, dissimilar floor finishes, curbs, columns, pipes, ceilings and where changes occur in backing materials.” If you have ever noticed cracked or missing grout along the side of a room or hallway (which you see quite often if you have a sickness that requires you stare at every floor of every room you go into), that is an example of the importance of perimeter joints. There should never be grout in that joint because the floor and wall move independently of each other. Rigid materials do not do well with the constant stretching and compressing that come with being sandwiched between two surfaces moving differentially.

Cracked grout in a corner may be an eyesore but is not typically a structural concern. The greater concern is the pressure that is being added throughout the tile installation. When the tile heats up, it expands and, instead of having an open relief space capped with a flexible sealant all along the edges, there is a 5,000-psi block of sand and cement constraining that movement. In many interior tile installations, especially smaller residential jobs, allowing for movement on the perimeter can be adequate.



The frequency of field movement joints is determined by classifying the installation into one of four categories: Interior, exterior, interior exposed to direct sunlight or above-ground concrete slab substrate.

Interior installations require a movement joint every 25 feet (7.62 m) or less in each direction. Exterior installations require a movement joint every 8 to 12 feet (2.44 to 3.66 m) in each direction with the caveat, “More frequent joint placement may be required depending on materials and environmental conditions.” This discrepancy goes back to the term “thermal expansion,” meaning caused by heat or temperature. Because almost all modern, interior spaces are climate-controlled, it can be reasonably assumed that these tile installations will move less because of fewer and milder temperature variations.

Consider a west-facing exterior in a high-elevation environment such as Denver, CO. A sunny day in October could easily reach ambient temperatures of 70°F (21°C), while the tiles could easily heat up to well above 140°F (60°C) during the afternoon. Once the sun drops behind the mountains to the west, the combination of the shade and falling ambient temperatures results in a rapid cooling of the tiles. As the ambient temperature drops down below 40°F (4°C) and the tiles rapidly cool to match that temperature, an incredible +100°F (37°C) delta for the tile temperature has occurred in just a few hours. This is just a typical day in October and does not consider extreme weather changes that can occur. Compare that to an interior installation where the temperature likely ranges between 70°F and 80°F (21°C to 27°C) over the life of the floor.

Interior tilework exposed to direct sunlight or moisture needs a maximum distance of 12 feet (3.66 m) in each direction between field movement joints. This is a similar situation to exterior installations because of the heating of the tiles due to exposure to sunlight. This is often found in lobbies and atriums of commercial buildings and hotels and can present some unique environmental conditions, as well. Vaulted ceilings create thermal layers as cold air sinks and warm air rises. And as the sunlight moves across an atrium, the tiles are heating and cooling along with it. This creates vast disparities in the tile temperatures across a single installation. Interiors can also experience moisture expansion near indoor pools, decks, steam rooms and other high-moisture areas, again requiring movement joints every 8 to 12 feet (2.44 to 3.66 m). Allowing for this differential movement requires something much more like an exterior installation than an interior one.

The final category is above-ground concrete slab substrates, where the maximum distance should also be also 12 feet (3.66 m) in each direction.

Before we all go cross-eyed and decide our time would be better spent looking at the pretty pictures on the previous pages, let’s get to the point. If I told you a tile expanded one millimeter with

a 100-degree F (55-degree C) increase in temperature, that does not sound too bad, right? Can’t the adhesive/grout hold onto a tile that only moves one tiny millimeter? When framed as a single tile, it does not sound like too daunting of a task. But consider that once the tiles are grouted, the stress of the expansion and contraction is shared amongst all the tiles.

If these tiles are 1 x 1 foot (0.3 x 0.3 m) and cover an area 10 x 10 feet (3 x 3 m), you could have as much as 10 millimeters of movement in each direction. If the area was 25 x 25 feet (7.6 x 7.6 m), that would almost equal 1 inch (2.5 cm) of movement! These are round numbers, used to make the math a little easier to track, but the concept is hopefully clear. By decreasing the distance between soft joints and making them more numerous, we lessen the stress put on the adhesive bond of the tile to the substrate. If I am walking down the sidewalk next to that building in Denver, I would like to think that the tile installation several feet above my head allows for enough thermal expansion.

This is just a cursory introduction to EJ-171, and there is so much more that can be reviewed and expanded upon. Hopefully, the importance of allowing for movement in a tile installation has been made clear. We never got into concrete joints, such as expansion, control, construction, cold, saw-cut, isolation, contraction and seismic joints. There is a glossary for these terms included in EJ-171 as well as a statement that these should all be continued through the tile installation. Joint width and depth are discussed, and materials used in the joints (such as backup strips and sealants) are described and classified. Thirteen different installation details are provided, showing the different joints and treatments.

Section EJ-171 of the TCNA Handbook is only eight pages long, but it is truly comprehensive in covering the pertinent information and responsibilities for the tile installation. If you do not have a copy of the TCNA Handbook, please get one. When you do, don’t forget to look in the back



About the author:

Logan Reavis

Logan is the Manager of Technical Services MAPEI Corporation. He is responsible the Product Support Department, the Architectural Support Department and regional field representatives. Logan grew up around the floor covering business and, shortly after completing his bachelor’s degree in business administration from The University of Texas at Arlington, began his career in the industry. He brings more than 15 years of experience in floor covering after spending time in distribution and on the flooring-contractor side of the business.



Flow and go!

with MAPEI's
Novoplan® HFL

Novoplan HFL is MAPEI's smoothest, high-flow, self-leveling underlayment available. Designed for use on interior concrete and engineer-approved floors, *Novoplan HFL* allows contractors to pour the floor and leave; there is little to no need for finishing tools with this high-flow underlayment.

Other properties include:

- Can withstand moisture vapor up to 8 lbs. per 1,000 sq. ft. (3.63 kg per 92.9 m²)
- VOC-free; passes both Rule #1168 of California's SCAQMD and Section 01350 of California's CDPH
- Suitable for use under carpet, resilient, wood and ceramic flooring
- Suitable for use in interior, heavy commercial applications
- Fast flow rate and smooth finish, saving time on installation

High-flow *Novoplan HFL* is fast becoming a contractor favorite. As Universal Flooring in Omaha writes, **"This was the best self-leveler we have ever used. It mixed and poured easily. You can almost pour it out and walk away. You do not need to overwork the leveler with a smoothing tool or spike roller, and very little raking. We simply poured and basically walked away with little placement activity besides pushing it to the desired location."**

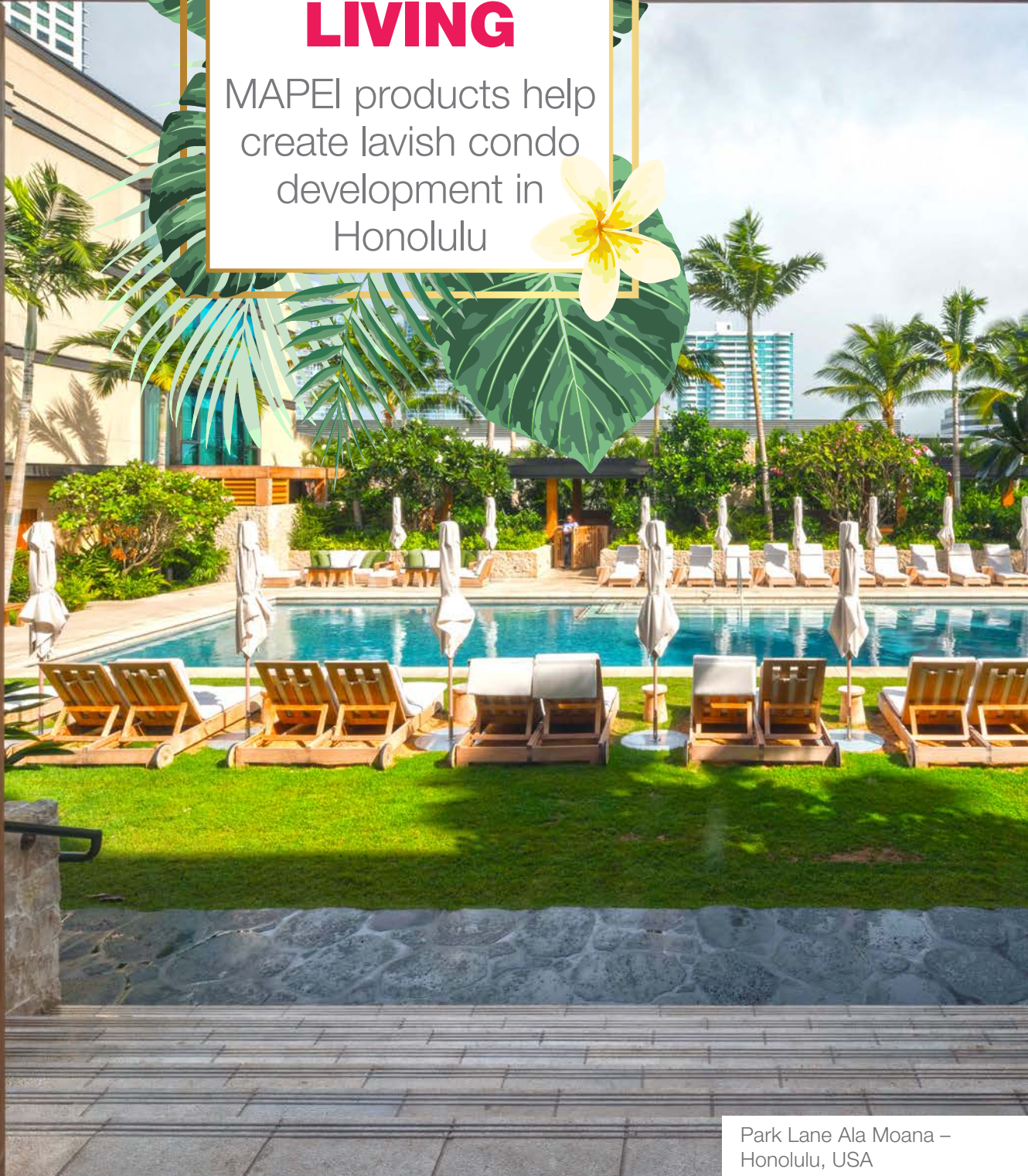
Find out for yourself. To go with the flow, visit www.mapei.com.





LUXURY LIVING

MAPEI products help
create lavish condo
development in
Honolulu



Park Lane Ala Moana –
Honolulu, USA



Overview: A wide variety of MAPEI products – including waterproofing, adhesives, grouts, mortars, self-levelers and cleaners – were used to make ultra luxurious condominium complex Park Lane Ala Moana come to life.

Park Lane Ala Moana is an ultra luxurious, low-rise set of condominiums located in Honolulu, HI. Nestled on 7.3 acres (2.95 hectares) with unobstructed views of the Pacific Ocean, the multi-million-dollar complex houses seven buildings featuring a total of 217 units – ranging in size from 1,600 square feet (149 m²) to more than 6,500 square feet (604 m²).

The upscale development features resort-style amenities that include oversized unit balconies, private pools and garages, a luxury spa, a wine room, entertainment facilities, a gym, a library, lounges for all owners and guests, a 300-piece private art collection, extensive tropical landscaping and much more.

Park Lane Ala Moana is a prime real-estate property located on the grounds of the Ala Moana Shopping Center, the largest retail complex in the state of Hawaii. Park Lane Ala Moana also presently houses the highest recorded price in Hawaii for a condominium, which sold for \$23.5 million (USD).

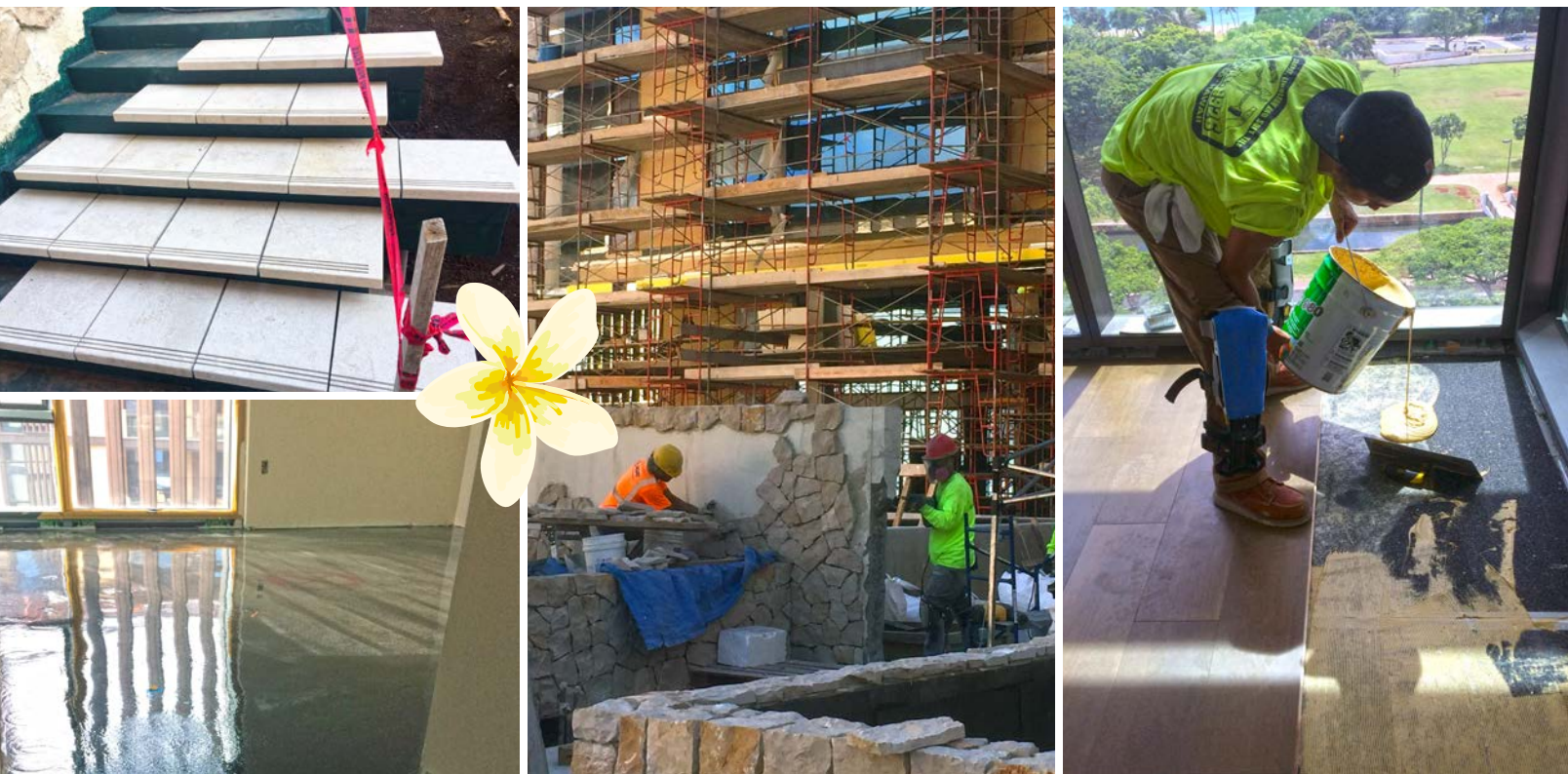
A condominium complex of Park Lane Ala Moana's magnitude and elegance required detailed work, constant coordination, a dedicated team and high-quality products during its construction. MAPEI was on hand to help achieve the project's ultra luxurious design.

MAPEI products on the jobsite

Over the course of two years, crews from installer A-American Custom Flooring and contractor Albert C. Kobayashi, Inc. worked together to install numerous MAPEI products in order to match the various substrates and specified installation needs.

"This project included almost every type of installation you can think of," said Stephen Paziienza, MAPEI's coordinator on the project. "It was a completely new build. There was waterproofing and prep work. The crews worked on masonry and on concrete. They worked on the building facades and installed cladding. They installed ceramic and stone tiles, wooden flooring, resilient and carpet.

"There was a total of 1,535,000 square feet [142 606 m²] quoted for this project," Paziienza said. "It ended up being 980,000 square feet [91 045 m²] of tile, stone, pavers and cladding; 375,000 square



feet [34 839 m²] of wood flooring; 175,000 square feet [16 258 m²] of carpet; and 25,000 square feet [2 323 m²] of resilient and rubber flooring.”

At the time of Park Lane Ala Moana’s construction, many Honolulu architects and designers were specifying luxury high-rise projects that focused on “zero-tolerance” transitions for all finish work. This zero-tolerance-transition design scheme created challenges for interior and exterior walls and flooring – all transitions were required to have no change of plane from material to material. Height transitions for tile, wood, carpet and Americans with Disabilities Act (ADA) requirements, as well as for all amenities, had to be benchmarked to the same specifics. Even if thresholds were used, the height of all thresholds had to remain at zero transition.

MAPEI’s self-leveling underlaments and primers became the major products for providing and adjusting height transitions. **Novoplan 1**, **Novoplan 2 Plus** and **Ultraplan 1 Plus** underlaments were used for the bulk of the self-leveling work in conjunction with **Primer L**, **Primer T** and **ECO Prim Grip**. When needed, **Planiprep SC** skimcoating compound was used to skimcoat over the self-leveling materials for resilient- and wood-flooring installations.

Hawaii’s climate and the jobsite’s proximity to the Pacific Ocean meant that moisture mitigation was a must to ensure stability for the LEED-certified wood flooring, carpet and resilient-/rubber-flooring installation that was earmarked for Park Lane Ala Moana.

Planiseal VS epoxy coating was the main moisture-mitigation product for all areas of wood- and resilient-flooring installations; for bedroom carpeting, **Primer WE** was used as an approved moisture mitigator in order to save on costs. **Mapecem Quickpatch** was also applied and used as a pre-moisture floor patch. In addition, **Mapelastic AquaDefense** waterproofing membrane was used with **Reinforcing Fabric** for bathrooms, showers, kitchens, patios, spa facilities, landscaping and balconies.

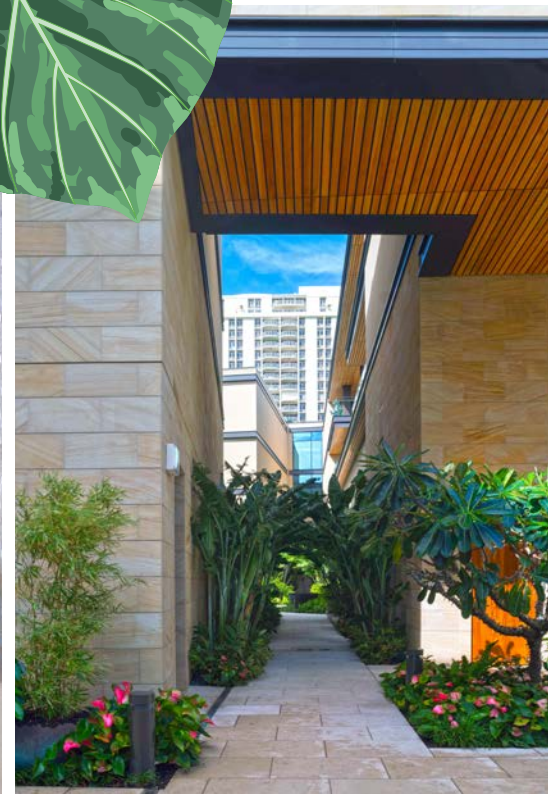
Granirapid and **Kerabond T / Keralastic** mortar systems were used to install various types of natural stone on the vertical exterior facades. The combination of the two mortar systems provided necessary bond strength and rapid setup in specific areas. For all terrace and retaining-wall installations, **Mapelastic** cementitious membrane was used to help create the large “Puka Lava” volcanic-stone look.

Ultraflex LFT became the “workhorse” mortar for all large-format tile and stone installations – both interior and exterior – that included bathrooms, showers, common areas, walkways, meeting rooms, dining rooms and recreation areas. **Ultraflex LFT** is a premium, nonslump, non-sag, large-format tile mortar with polymer, making it an ideal product for these installations. The grouting choice for tile installation was **Ultracolor Plus FA**, a fast-setting, color-consistent, nonshrinking, efflorescence-free grout. However, **Keracolor S** (sanded) and **Keracolor U** (unsanded) grouts were used in areas where a specific color of **Ultracolor Plus FA** was not readily available in Hawaii. For caulking and expansion joints, **Mapesil T** sealant was used throughout the property.

For concrete construction, **Mapecem 102** mortar was used to build up exterior concrete ways and landings to fix depressions. **Planitop X** and **Planitop XS** repair mortars were used for structural repairs. **Keracolor U** was used to grout shower wall units. **Planicrete W** setting compound was used to adhere limestone to elevator-cab doors.

For the pool-deck installation, **Ultraflex LFT** and **Keracolor S** were used to set the pool coping. In addition, **Adesilex P10 Mosaic & Glass Tile** mortar was used to set glass-tile mosaics within the spa area.

To complete the tile installations, crews cleaned the tile using **UltraCare Epoxy Grout Haze Remover** and **UltraCare Heavy-Duty Stone, Tile & Grout Cleaner**. They then sealed the tile with



UltraCare Penetrating Stone, Tile & Grout Sealer, a natural-looking, water-based penetrating sealer for maximum protection against staining.

MAPEI's quality, reputation and warranty standards have been used around the world and are now part of Park Lane Ala Moana, one of the most unique and luxurious residences in Hawaii.

The availability of product and shipping materials to Hawaii can be challenging. To avoid time delays, contractors used multiple products to finish the Park Lane Ala Moana construction. These products included **Ultrabond ECO 810** adhesive for carpet tile, **Ultrabond ECO 360** adhesive for resilient flooring and **Ultrabond ECO 711** adhesive for vinyl flooring in maintenance areas. **Ultrabond ECO 980**, **Ultrabond ECO 985** and **Ultrabond ECO 995** adhesives were also used for wood-flooring installation.

TECHNICAL DATA

Park Lane Ala Moana – Honolulu, HI, USA

Years of construction: 2016-2018

Years of MAPEI involvement: 2016-2018

Where MAPEI products were used: Surface preparation; waterproofing; masonry; concrete work; and installation of ceramic and stone tile, wood flooring, carpet and resilient/rubber flooring

MAPEI coordinator: Stephen Pazienza

Project owner: Kobayashi/The MacNaughton Group

Contractor: Albert C. Kobayashi, Inc.

Installer: A-American Custom Flooring

Main architect: Solomon Cordwell Buenz

Challenges: Zero-tolerance thresholds and moisture mitigation

MAPEI Products

- Adesilex™ P10 Mosaic & Glass Tile
- ECO Prim Grip™
- Granirapid® System
- Kerabond® T / Keralastic® System
- Keracolor® S
- Keracolor U
- Mapecem® 102
- Mapecem Quickpatch
- Mapelastic®
- Mapelastic AquaDefense
- Mapesil™ T
- Novoplan® 1
- Novoplan 2 Plus
- Planicrete® W
- Planiprep™ SC
- Planiseal® VS
- Planitop® X

- Planitop XS
- Primer L™
- Primer T™
- Primer WE™
- Reinforcing Fabric
- Ultrabond ECO® 360
- Ultrabond ECO 711
- Ultrabond ECO 810
- Ultrabond ECO 980
- Ultrabond ECO 985
- Ultrabond ECO 995
- UltraCare™ Epoxy Grout Haze Remover
- UltraCare Heavy-Duty Stone, Tile & Grout Cleaner
- UltraCare Penetrating Stone, Tile & Grout Sealer
- Ultracolor® Plus FA
- Ultraflex™ LFT™
- Ultraplan® 1 Plus

COMMUNITY ART

Volunteers use MAPEI products to install mosaic design at salmon hatchery



Issaquah Salmon Hatchery
– Issaquah, WA, USA

Overview: A unique mosaic design, solely constructed from recycled glass mosaics, currently graces a wall of the Issaquah Salmon Hatchery in Issaquah, Washington. More than 100 volunteers gathered materials and used various MAPEI products to bring an artistic design to life.

Among the Washington Department of Fish and Wildlife's hatcheries, the Issaquah Salmon Hatchery is one of the most visited. Tours are regularly conducted at the hatchery, during which visitors can see salmon return home to spawn. Community education programs are also held at the facility, as well as various fundraising endeavors.

In late 2016, MAPEI sales representative Chris Anderson received a call from local mosaic artist Cheryl Smith, who asked if MAPEI could provide a system that would allow tiles to be placed over salmon-holding tanks at the hatchery. Unfortunately, MAPEI determined that without the design specification for the tanks themselves, the company would not recommend installing artwork on the outside of the holding pens; therefore, MAPEI had to turn the project down.

A few weeks later, Smith called again. She said that the project was still viable, that she had found a new location in the hatchery for her mosaic and that, because MAPEI had been so helpful, she wanted the company to provide the tile system.

The mosaic, simply named "Salmon," serves a dual purpose. Not only does it brighten an otherwise drab wall, it also helps to involve members of the public community in the renovation of their own local fish hatchery. The fact that the artwork is a mosaic requiring no prior art training or knowledge made it the perfect vehicle to bring the community together across all ages and abilities.

According to Smith, a key objective of the project was to minimize the impact on the environment, specifically the ecosystem of Pacific Northwest salmon. "Using recycled materials reduces potentially dangerous additions to landfills, keeping streams clean and the salmon population thriving," she said.

The recycled glass used in the piece was sourced from vendors around Washington. Local glass retailers Perry Stained Glass Studio and Northwest Art Glass donated stained glass. Glass bubble rounds for the background were donated by Pentel Surfaces and collected from the International Interior Design Association's ZeroLandfill event. In addition, tile donations were made by Bedrosians Tile & Stone.

One hurdle for the project remained: The 76-square-foot (7.06-m²) mosaic would be installed by volunteers, so any products designated for the job had to be user-friendly. MAPEI was on board to provide any technical support and training necessary to use its products. MAPEI sales representative Keith Haney went to the site and conducted a seminar on **Mapelastic 315** waterproofing membrane. In addition, Anderson provided technical training by phone and e-mail throughout the course of the entire project.



MAPEI products on the jobsite

All of the products used on the project were applied by a team of more than 100 volunteer artists who worked under the direction of MAPEI representatives. These products included **Mapecem Quickpatch** to patch and smooth the existing concrete wall, **Mapelastic 315** for waterproofing, **Adesilex P10 Mosaic & Glass Tile** and **Keraply** (used together to produce a high-performance mortar), and **Mapesil T** silicone sealant for joints.

MAPEI Flexcolor 3D grout – in the color “Crystal Moon” – also played an integral role. Not only did this product complement the “green” goal of using recycled products, it also provided an iridescent effect to the grout joints that complemented the glass tile.

The Issaquah Salmon Hatchery mosaic project has been featured in several news articles for its artistry, creativity, community involvement and recyclable qualities. In addition, the project was submitted for the MAPEI North America “Show! Place! Win!” reference project competition and unanimously selected by the senior leadership committee for submittal to MAPEI’s international competition in Italy. MAPEI is honored to be a part of this exceptional community effort.

TECHNICAL DATA

Issaquah Salmon Hatchery
– Issaquah, WA, USA

Project category: Commercial

Year of original construction: 1936

Year of MAPEI involvement: 2017

Where MAPEI products were used:
Mapecem Quickpatch for patching and smoothing a concrete wall, *Mapelastic 315* for waterproofing the wall, *Adesilex P10 Mosaic & Glass Tile* used with *Keraply* to create mortar for the wall, *MAPEI Flexcolor 3D* for grouting mosaic tiles and *Mapesil T* for sealing joints

MAPEI coordinators: Chris Anderson and Keith Haney

Project owner: Friends of the Issaquah Salmon Hatchery

MAPEI distributor: American Olean (#503 Kent)

Architect/artist: Cheryl Smith

Installers: 100+ local volunteers

Project manager: Cheryl Smith

Photographer: Chris Anderson

Project size: 76 square feet (7.06 m²)

Challenge: Training volunteers with varying degrees of experience on how to use MAPEI products

MAPEI Products

- *Adesilex™ P10 Mosaic & Glass Tile*
- *Keraply®*
- *Mapecem® Quickpatch*
- *MAPEI Flexcolor® 3D*
- *Mapelastic® 315*
- *Mapesil™ T*



MISSION POSSIBLE

MAPEI products help place historic church back on 'solid footing'

St. Augustine's Roman Catholic Church – Dundas, ON, Canada

Overview: St. Augustine's Roman Catholic Church is a magnificent Gothic-style church constructed in 1863. It was built to satisfy the needs of a small but ever-expanding congregation in Dundas, Ontario, after a spectacular fire destroyed the church of 1827. To protect the structural integrity of the flooring, MAPEI products were used to waterproof the front foyer and provide crack isolation throughout the church.

If St. Augustine's Roman Catholic Church in Dundas, Ontario, has a story to tell, it's one of staying power. St. Augustine's Parish is the first parish of the Diocese of Hamilton, established in Dundas, Ontario in 1827. According to parish records, Dundas had a population of 500 – with about that same number in the rural parts of the parish. Life was difficult for those 1,000 souls. The record shows almost as many burials as baptisms and marriages combined.

Fire was always a threat. In fact, the church burned down in 1863. It was rebuilt in the Gothic style using wooden planks and financed through "pew rent" and community donations.

Since the rebuilding, the church has had its parishioners trod over its floors through two World Wars and the Great Depression. It has hosted more than 150 years of funerals, wedding processions, midnight masses and weekly Sunday services.

Even through many years and much activity, the church's wooden

joists and floor support were still holding up well. But the floor covering was becoming a concern, so MAPEI was invited to step in.

The original church floor was made of stark wooden planks and later covered with vinyl composite tile, and then again with a linoleum overlay.

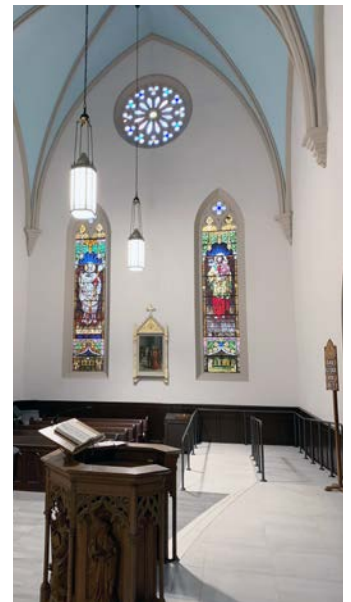
"The flooring needed to be replaced due to indentations and damage, especially in the center aisle and in between the pews due to heavy foot traffic," MAPEI coordinator Gino D'Alesio said. "The diocese also wanted to update the look of the floors."

The restoration work required removing the two layers of the previous flooring, going down to the original subfloor. Then the 11,500 sq. ft. (1,068 m²) of surface needed preparation to properly receive tile according to modern industry standards. The challenge was removing the flooring without disturbing the structural integrity.

MAPEI products on the jobsite

"Waterproofing was used in the front foyer to safeguard and preserve the structural integrity of the construction," D'Alesio said.

Mapeguard UM underlayment membrane was applied atop the new plywood laid down throughout the church. That's because, unlike a rigid cement board, *Mapeguard UM* uncouples tile from the substrate below, minimizing cracking and de-bonding. The



unique engineered tri-layered design of *Mapeguard UM* absorbs lateral stress from the substrate without transferring this force to the tile or stone, which maintains exceptional bonds.

While *Mapeguard UM* does provide waterproofing, the heavy traffic endured by the church's front foyer inevitably results in significant pooling from worshippers' boots tracking in snow and slush in wintertime. With this in mind, **Mapelastick AquaDefense** premium waterproofing and crack-isolation membrane was applied over the *Mapeguard UM* underlayment seams, to provide extra protection to the original structure from water seepage.

Next, the large-format tile was installed with **Ultraflex LFT** White premium, large-and-heavy-tile mortar with polymer, specially formulated to deliver the best results for large-format tile for floors. **Ultracolor Plus FA** rapid-setting grout was selected for its stain-resistance properties, to ease the maintenance of the large area.

The innovation behind MAPEI's Waterproofing Systems – and Tile & Stone Installation Systems – helped restore this beautiful Gothic-style building, so that St. Augustine's Roman Catholic Church might extend its legacy for decades to come.

TECHNICAL DATA

St. Augustine's Roman Catholic Church – Dundas, ON, Canada

Project category: Public Buildings/ Spaces

Year of original construction: 1863

Year of MAPEI involvement: 2018

Where MAPEI products were used: *Mapeguard UM*, *Ultracolor Plus FA* and *Ultraflex LFT* White applied throughout the church; *Mapelastick AquaDefense* applied in the front foyer and over underlayment seams throughout the church

MAPEI coordinator: Gino D'Alesio

MAPEI distributor: Prosol Hamilton

Project owner: St. Augustine's Roman Catholic Church

Architect: Tarbutt Construction Ltd.

Photographer: Gino D'Alesio

Challenges: Removing and installing flooring to modern standards without disturbing the structural integrity

MAPEI Products

- *Mapeguard*® *UM*
- *Mapelastick*® *AquaDefense*
- *Ultracolor*® *Plus FA*
- *Ultraflex*™ *LFT*™ White



DISPENSING ADMIXTURES

No matter the dose or jobsite,
MAPEI can provide a customized
dispensing solution for admixtures.

Admixtures for concrete are crucial on a construction site. They can control the speed at which the concrete sets. They can add strength, inhibit corrosion, reduce shrinkage and much more, all depending upon the requirements of the project. With MAPEI's Admixtures for Concrete product line, chemistry and technology combine to create cutting-edge concrete solutions. Therefore, it stands to reason that the delivery systems for these solutions are as innovative as the products themselves.

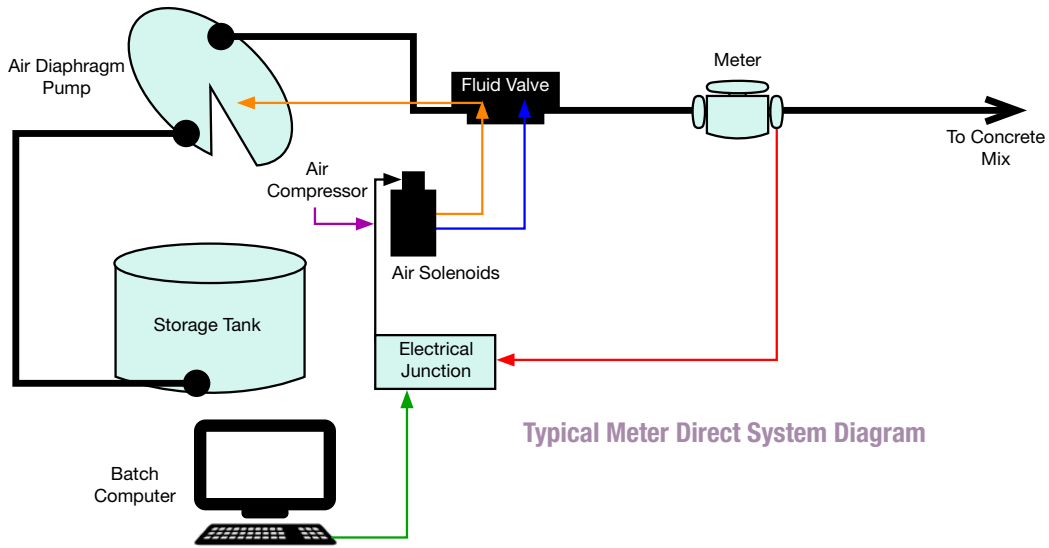
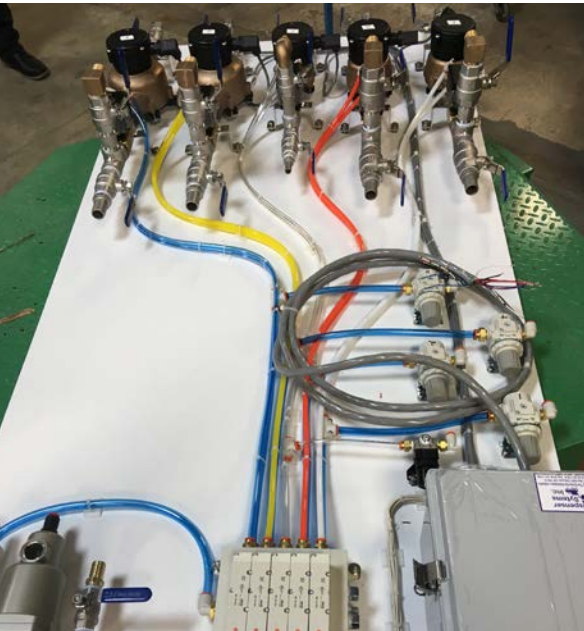
"It really is all about our ability to service our customers," said Jesse Osborne, MAPEI Admixtures' Sales Director – Concrete Admixtures and Cement Additives. "Not only do we provide them with customizable admixtures, we can provide them with the perfect, durable, customizable delivery system for those admixtures."

In baking, success or failure depends on the exact measurement of the ingredients. So too with concrete admixtures. However, with admixtures we're talking tons, not tablespoons. And with these measurements, more is at stake than dry cakes or a fallen meringue. "The measurements have to be precise," Osborne stated. MAPEI Admixtures' pump-driven dispensers automatically and precisely deliver the calibrated dose of admixture materials, freeing the crew to focus on application.

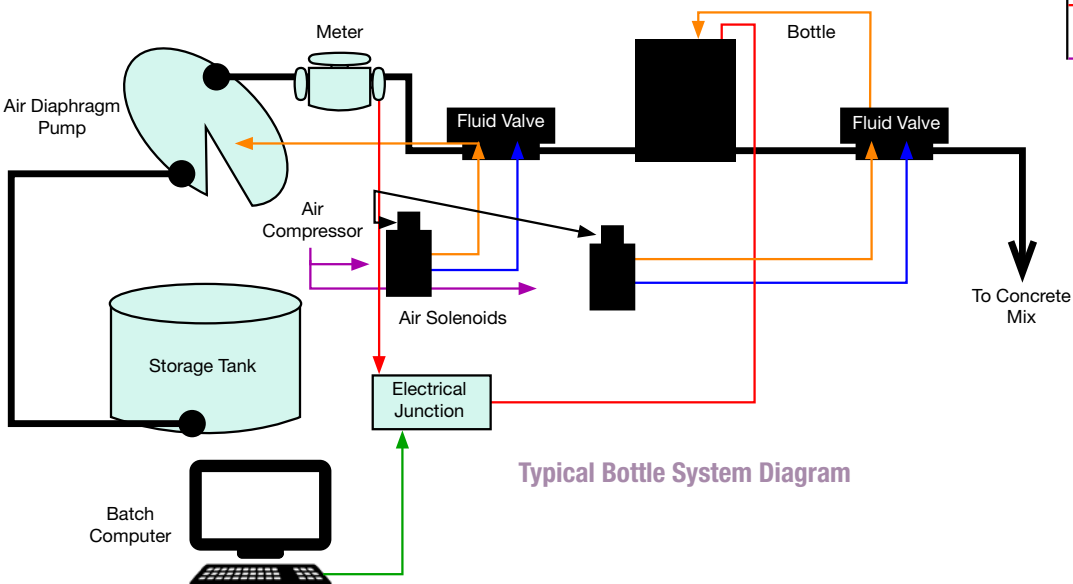
Not only must these dispensers fit the job requirements, they also must fit the jobsite. "Each dispenser is customized to fit each customer's individual needs," Osborne said. Subsequently, MAPEI Admixtures' dispenser capabilities run the gambit from portable, wheeled units to complex multi-bottle dispensing systems that fill rooms. "We even have meter direct systems that are housed in converted freight trailers. Repurposed trailers make great admixture dispensaries."

For the uninitiated, there are two types of dispensers: Meter direct systems and bottle systems. The meter direct system is used for mobile installations, such as with the repurposed freight trailers and the portable wheeled units. The bottle system is used for permanent installations – typically large jobs that require multiple bottles.

Osborne explained, "Regardless of the system that is chosen, MAPEI Admixtures will design and install it at the customer's site. And the individual factors of each site – terrain, environment, facility capabilities, etc. – are taken into account in the design and install process. These are truly customized dispensers. From the very first site visit, to technical assembly, to continued delivery of admixtures, MAPEI is a partner in the dispensing business. We take great pride in our ability to service our clients."



- Hose
- Constant Air
- Activated Air
- Control Wire
- Feed Signal Wire
- Meter Pulse Wire
- Compressed Air



READY? SET? WAIT...

The pandemic has put dreams on hold for MAPEI-sponsored sports teams in Canada

Competitive sports may not be deemed as an essential service, but we think the inspiration it gives us sure is. With most international sports indefinitely halted for the bulk of 2020 due to the coronavirus pandemic, MAPEI decided to touch base with some of the teams who wear our colors, to see how they are coping with the unprecedented situation. Like so many fellow Canadians, we found they were steadfastly positive, and not about to let anything knock them off their stride for long.

Macogep-Tornatech Girondins de Bordeaux

This elite MAPEI-sponsored UCI women's cycling team had high hopes they might send one or more of their number to Tokyo in July for the Summer Olympics. While they remain hopeful to compete in the postponed 2021 Games instead, they have made their peace with the fact that their whole season remains up in the air for now. While their plans to start off their competitive season in April in Arkansas got scrapped, they do have access to online tools like Zwift to simulate races with others in their class in real time.

Team cyclist Émilie Fortin said for the time being, she has decided to simply continue her winter training regimen on her modified stationary bike indoors. "For one thing, it's still cold outside," she said. "And for another, if I were to fall and possibly injure myself, I might end up taking a hospital bed from someone who needs it more. So, it's safer to train indoors."

Toronto Velodrome Club

Another cycling team we sponsor, Toronto Velodrome Club, was likewise hopeful to send some of their members to Tokyo in July 2020, but is staying the course and looking at the bright side. "I think the team is trying to stay as positive as possible," said TVC Olympic hopeful Michael Foley. "Everyone is dealing with it in their own way. The Games being delayed is disappointing, but at



the same time it gives us more time to close the gap to the top team. And so it could mean a better result for the team at Tokyo 2021, which is exciting."

While the team is relieved that their qualification status for Olympic competition still stands for 2021, a team statement concluded on a philosophical note: "With everything that's going on in the world, it doesn't feel all that bad. Just like any job, we have to stay at home and wait for the virus to blow over. We try to look at the bigger picture: There are people dying out there and people in healthcare who have to go to work to save lives. We stand with them in doing our part to put an end to this."

Le Club Vélo Saint-Joseph

If a positive attitude is a key factor for success, the men of Le Club Vélo Saint-Joseph are leading the way. Happily exercising more than just physical distancing, they inspire us with their heartfelt commitment to each other and the surrounding community with their indomitable spirit.

"We'd been training together five or six times a week all winter, and we were really looking forward to the first FQSC race of the season," said team leader Geoffroy Tremblay. "To keep focused, we're doing virtual trainings three times a week, all together."

Even keeping that up has its challenges, he said. "Some guys on the team are in solitary confinement after being overseas, others are employed in emergency services, and some are superheroes" (as by driving trucks throughout North America to supply the population with food and essential goods).

Other members of the team are doing their part to keep everyone safe by staying indoors as much as possible, but it's great to see they aren't letting that slow them down.



Clockwise from upper left: Toronto Velodrome Club; Macogep-Tornatech Girondins de Bordeaux; Veneto (peeewee hockey); Centre Pierre-Harvey



“We were all friends before we became a cycling team,” he added. “We’re more like a family now. When you have the will, you’ll find a thousand ways to succeed; if not, you’ll find a thousand excuses.”

MAPEI is happy to support them as they continue to train hard to stay ready for whenever they get the green light to return to competitive racing. Keep it up, guys! To put your own dreams on hold for the sake of others is not a sacrifice that most of us will experience... It’s truly inspiring, and that’s why MAPEI Canada is so proud of all the athletes we support.

A timeline of early interruptions in sports

- MARCH 11 NBA 2019-20 season is suspended indefinitely
- MARCH 12 NHL 2019-20 season is suspended indefinitely
- MARCH 13 2020 Concrete Canoe competition, slated for May 14-17, at Western University in London, ON, is cancelled
- MARCH 14 2020 “World Cup of Quebec” X-Country Ski Race is cancelled
- MARCH 23 Team Canada announces it is pulling out of Olympic Games going ahead this summer
- MARCH 24 Tokyo Summer Games are postponed to 2021

Celebrating Trostrud Mosaic & Tile Co.

In today's fast-paced, disposable society it is rare to find work – let alone a work ethic – that lives up to traditional standards. It is even rarer to find a company that has been passed down through generations of the same family. Those values are found at MAPEI and they are also found at Trostrud Mosaic & Tile Co. – a family-owned and -operated contracting company in Wood Dale, Illinois. “Go out of the way to do the best you can, with the best you can get,” said Brad Trostrud, Vice President, and grandson of the company's founder, Earl Trostrud Sr., when asked for a guiding principle. “That's what my father always says,” he explained. His father, Earl Jr., the current company President and the son of the founder, is 84 years young, and still comes in to the office every day. “And he learned that principle from his father, Earl Sr.”

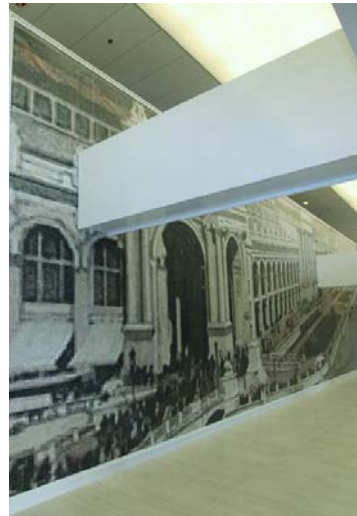
Founded in 1929 by Earl J Trostrud Sr., the contracting company had a focus on residential tile contracting work. Ten years into building a successful business based on his commitment to hard-work and uncompromising quality, Trostrud Sr. closed his business and joined the war effort. He reopened in 1946, maintaining his focus on residential projects. By 1957, however, projects in a local chain of gas stations marked Trostrud Mosaic & Tile Co.'s entry into the commercial market. The following year, Earl Jr. joined his father, and the company started to pursue a mix of both commercial and residential projects – quickly rising to become one of Chicagoland's premiere tile contractors. By the time Earl Sr. retired in 1975 and Brad joined in 1985, Trostrud Mosaic & Tile Co. was one of the Midwest's premiere tile contractors. That fact continues to this day. The Trostruds and their commitment to excellence have been driving forces in the tile industry – sitting on multiple boards and committees, they have shaped the tile industry itself. They also work closely with MAPEI, using our products in the beta stage in their workshop to help us refine if necessary. The resulting, perfected, end products are then proudly featured on both commercial and residential projects.

Through those projects, the Trostruds have shaped the architectural features of Chicago – two of their more recent notable projects are acclaimed for their historic impact, and their beauty. The

architecturally renowned Latham Watkins building in downtown Chicago, designed by Mies van der Rohe, features a two-story glass tile mosaic wall depicting the 1893 Chicago World's Fair. Not trusting the installation of their prized art wall to just anyone, Latham Watkins and Gensler (the specifying architects) turned to the Trostruds.

The second, is perhaps more easily accessible, but no less impressive. The mosaic floor in the Shedd Aquarium's coral reef exhibit – also in downtown Chicago – replicates the ethereal look of coral or of floating jellyfish depending upon your perspective, using thousands of glass tiles. In the darkened exhibit, the light bounces off of the glass mosaic tiles truly creating a shimmering path and, in places, adding a magical underwater feel.

There are many more such projects, but these two readily underscore the fact that the Trostruds have elevated the science of setting tile to an art. And, in doing so, their uncompromising commitment to quality shows. MAPEI is proud to be a part of their projects and we wish them many more years of continued success.



MAPEI sponsors 2020 UCI Road World Championships



In keeping with tradition, MAPEI S.p.A. sponsored the 2020 UCI Road World Championships, which was held September 24-27 in the city of Imola within the Emilia-Romagna region of central Italy. The event took place at the Enzo and Dino Ferrari International Racetrack and around the surrounding hillsides, and was organized by the International Cycling Union (UCI), whose main sponsor continues to be MAPEI.

said Veronica Squinzi, MAPEI's CEO. “Being the UCI's main sponsor confirms the company's very close ties with a sport it has always supported and one whose intrinsic values are in MAPEI's DNA and in our family's.”

Televised worldwide, the event featured a schedule that included four races. The two individual time trials (an elite men's time trial and an elite women's time trial) and two road races (again, both men's and women's) were all televised from the start across five continents.

The MAPEI brand was constantly on show during the four days of fully televised cycling, with the logo appearing on thousands of banners and inflatable arches, award panels, press conferences, advertising totems and communications materials.

“We are delighted the 2020 Road World Championships were held in Italy, a country with a great tradition for cycling that we share,”

Sassuolo reaches 100

Unione Sportiva (U.S.) Sassuolo Calcio, also known as Sassuolo, is MAPEI's football (soccer) team based in the town of Sassuolo, Italy. Founded in 1920, the team is celebrating 100 years of teamwork that has led to countless victories on the playing field. As part of Sassuolo's centenary celebrations, the team announced some of its new projects, including an agreement that it has made with the Sassuolo City Council.

According to Giovanni Carnevali, the team's managing director, a new road under construction that leads to MAPEI Football Center – where Sassuolo team members train – will be named after MAPEI Group's late managing director Giorgio Squinzi. In addition, a new synthetic grass pitch will be named after Adriana Spazzoli, who was the team's Vice President and MAPEI Group's Operational Marketing and Communications Director.

"Our youth teams will play their official matches on this pitch, which will also be used to host social events in partnership with Sassuolo City Council," Carnevali said.

"The entire MAPEI Group believes in Sassuolo, as we show on a daily basis," said MAPEI Group CEO Veronica Squinzi. "We love this team and my parents had great faith in it. The entire company wants to continue this dream."

Congratulations to Sassuolo football team on its 100th anniversary.



Speakers at the 100th anniversary celebrations (left to right): Francesco Magnanelli, Carlo Rossi, Marco Squinzi, Veronica Squinzi, Giovanni Carnevali and Roberto De Zerbi.



Farewell to a friend and colleague



It is with deep sadness that we share the loss of Bill Allen, Business Development Manager – Tunneling for MAPEI UTT. Our colleague, and the UTT team's North America Chemical Grout Injection Manager, Monica Rourke, has written the following tribute and shares it with us:

"Bill was living proof of what a truly genuine person is. He was a good boss to the people in his charge, an enthusiastic and knowledgeable

colleague, a loving father to his two sons, Noah and Gabriel, and a devoted grandfather. He was also a passionate believer and participant in the Jewish religion.

"Bill loved the Jewish faith. He got his 'Bucket List' wish and went to Israel before he passed, and that journey brought him a sense of courage and peace to face his remaining days with dignity and strength. The character of the life he lived might be summed up in a few words: He was sincere, he was earnest, he was loyal.

"Bill gave energy, commitment and inspiration to his staff and to others with whom he worked. His co-workers at MAPEI remember Bill as a happy person, one who not only was cheerful in himself, but who gave much cheerfulness to others. He had a beautiful smile, a sense of humor, and a gentle demeanor. Bill was bright, logical, and systematic in his thinking. He was always willing to share his ideas and information. He was passionately interested in the future

of the shotcrete industry and regretted that he would not have the time to spend doing the research and testing he had planned for the future. He was our 'go-to shotcrete' expert!

"Bill will be remembered by many for his knowledge and achievements within the shotcrete industry, but he will also be remembered fondly for his friendly smile, his beguiling laugh, and his generous heart. He was never one to shy away from a 'good joke,' a fun time, or a mischievous escapade. And there were a few over the years! Perhaps some of you reading this tribute are smiling with your own special memory that you shared with Bill and that's exactly what he would have wanted – no tears – just smiles.

"Albert Einstein said, 'The value of a man should be seen in what he gives and not in what he is able to receive.' Bill Allen was a man who gave. He gave much to his work, to his faith, to his family and to the future of our industry. And I was proud to call him my friend.

"That is why, ladies and gentlemen, I invite you to pause as you are reading this tribute and remember a special time or a moment that you shared with Bill, and if that memory brings a smile to your lips, then Bill would be happy. This is far more than saying 'goodbye' to this joyful, talented man; it is a commemoration of his life and his contributions. A candle whose brilliance will light the future and whose unique simplicity and humbleness will inspire many, both personally and professionally, for years to come. I think of Bill during the last months of his life; our conversations... his ability to make me feel better about his 'passing,' that too many times it was him consoling me and making me laugh, instead of the other way around. What can I say? That was Bill. Service above self. A life too short, but a life well-spent and well-remembered."



MAPEI Corporation's headquarters in Deerfield Beach, FL, has achieved Fitwel certification. Fitwel is an evidence-based standard that enables positive impacts on employee health through improvement to design and operations within buildings.

Created as a joint initiative led by the U.S. Centers for Disease Control and Prevention (CDC) together with the General Services Administration (GSA), Fitwel provides guidelines for designing, constructing and operating healthier buildings. The Center for Active Design (CfAD) is the operator of Fitwel and responsible for the third-party verification of the certification.

This recognition makes MAPEI Corporation the first manufacturing company in the building products industry to become Fitwel Certified. MAPEI Corporation is also the first project to be certified in Florida under the Single-Tenant Building Scorecard. This recognition also reinforces MAPEI's commitment to providing a healthy workplace for its employees.

Fitwel measures the following seven health impact categories when determining certification:

- Impacts surrounding community health
- Reduces morbidity and absenteeism
- Supports social equity for vulnerable populations
- Instills feelings of well-being
- Enhances access to healthy food options
- Promotes occupant safety
- Increases physical activity

MAPEI successfully achieved this Fitwel designation by incorporating evidence-based design and policy strategies that support the physical, mental and social health of the occupants in the Deerfield Beach corporate offices. Notable features include the main staircase, visible from the main entryway and accessible to all occupants. In addition, the facility features an outdoor walking trail that provides occupants with increased exposure to the outdoors, encourages physical activity and promotes social interaction. Both the stairway and walking trail are features that contribute to enhanced physical and mental

strength. MAPEI has also established policies to create healthy indoor and outdoor environments for building occupants, including policies on indoor air quality and green purchasing.

"This certification shows that we care about our employees just as much as we care about our customers and our products," said Luigi Di Geso, President and CEO of MAPEI Corporation. "We're just getting started: We've created a baseline using Fitwel's strategies, and by the time recertification comes around in three years, we will have implemented more of the strategies. We look forward to sharing our journey and helping to encourage health and wellness among our supply chain and customer community."

Currently, the Deerfield Beach headquarters is the only MAPEI Corporation facility that is certified.



Impacts Surrounding Community Health



Reduces Morbidity and Absenteeism



Supports Social Equity for Vulnerable Populations



Instills Feelings of Well-Being



Enhances Access to Healthy Foods



Promotes Occupant Safety



Increases Physical Activity



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 the 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.

COVERINGS CONNECTED 2020: MAPEI'S ONLINE EXPERIENCE



Coverings Connected
A digital experience for Coverings 2020

Coverings was originally slated to take place in New Orleans from April 20-23, but the COVID-19 crisis derailed plans. Yet the industry refused to cancel the conference, and “*Que le bon temps roule... en ligne*” (“Let the good times roll... online”) became the rule of the day.

The pandemic has forced the entire world to rethink the ways in which we work. Although initially there was some disappointment about the cancellation of the physical conference, the virtual conference (which started on April 20 and will remain ongoing until Coverings 2021) has proven to be a success. Coverings is always one of the highlights of the conference calendar for MAPEI and 2020 has been no exception.

“Rather than a physical booth that has a finite lifespan, the online conference provides us with a virtual booth and the opportunity to present videos, product spotlights and press releases,” said Steven Day, MAPEI Corporation’s Director of Operational Marketing. “The virtual booth stays up online and interactive until Coverings 2021.”

Among the innovations highlighted in our “booth” is the press release celebrating the fact that Brittany Storm, MAPEI Corporation’s Sustainability Manager, was awarded “Rock Star of the Year” in the manufacturer category. Although the press conference and awards luncheon had to be cancelled, they will be celebrated in 2021, when Coverings is scheduled to be held April 13-16 in Orlando, Florida.

The Coverings Rock Star award is designed to honor emerging leaders in the tile and stone industry. Brittany is a LEED Accredited Professional (AP) with Building Design and

Construction (BD+C) and Interior Design and Construction (ID+C) specialties, as well as a WELL AP and Fitwel Ambassador. In addition, she is active in several sustainability committees. Her background as a sustainable building consultant and experience in construction management allow her to speak to both big picture and technical aspects of a project. “I am honored for the recognition. Thank you all for your continued support and encouragement,” Brittany said when asked to speak about the recognition.

Visitors to our virtual booth will also discover that MAPEI is leading the way with a variety of new products, including:

Mapeheat™: As the industry’s most comprehensive line of radiant floor-heating products, the *Mapeheat* line includes membranes and customizable mats, cables, mesh, programmable thermostats and a variety of accessories.

Keraflex™ Super: This premium, extra smooth, polymer-modified, large-and-heavy-tile mortar and thin-set mortar is highly versatile and non-sag/nonslump. Use it to install tile and stone on floors, walls and countertops.

Mapelastix® Turbo: Rapid-drying for fast-track waterproofing and crack isolation, this two-component, cementitious-binder-based membrane includes fine-grained selected aggregates, special admixtures and synthetic polymers in water dispersion. It is designed for interior and exterior installations under ceramic tile or stone in residential, commercial and industrial intermittently wet or submerged environments.

Ultracolor® Plus Max: Ultra premium, fast-setting, polymer-modified and non-shrinking, this grout offers rich and vibrant colors with maximized color depth and color consistency,

providing the blackest black and the brightest white colors on the market.

Ultrabond ECO® GPT: Formulated with hybrid-polymer-based technology, this single-component, non-sag, easy-to-trowel adhesive is specially designed to install gauged porcelain tile and gauged porcelain tile panels/slabs on interior vertical surfaces and countertops.

Ultraflex LHT® SG: This standard-grade version of a non-sag/nonslump, polymer-modified, large-and-heavy-tile mortar and thin-set mortar is for interior/exterior installations on floors, walls and countertops.

MAPEI Flexcolor® CQ: A professional-grade, ready-to-use specialty grout, *MAPEI Flexcolor CQ* allows precision commercial and residential installations of porcelain, ceramic and natural-stone tiles. Its formulation with color-coated quartz ensures color consistency, ease of cleanability and improved workability.

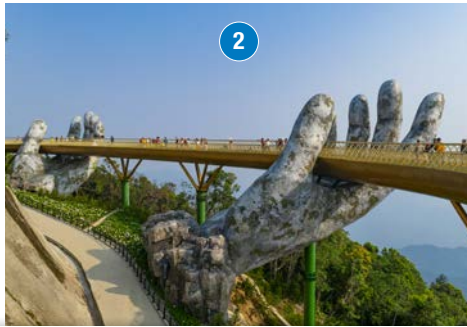
Although this year MAPEI had to forego the entertainment and education provided by its demo team at Coverings, we do have the advantage of having a product video available in our virtual booth space. Visitors can currently view the video “MAPEI’s *Keraflex Super* – New mortar technology meets today’s tile trends.”

To experience MAPEI’s virtual booth, visit <https://expo.coverings.com/Cov2020/Public/eBooth.aspx?IndexInList=8&FromPage=Exhibitors.aspx-&ParentBoothID=&ListByBooth=true&BoothID=361850>.

To learn more about the 2020 Rock Star awards, visit <https://www.coverings.com/press-release/coverings-honors-emerging-professionals-with-2020-rock-star-awards/>.



1



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3

MAPEI'S HELP WITH BRIDGE PROJECTS WORLDWIDE

Bridges across the world have relied on MAPEI products for many years. As a recognized leader in the construction industry, MAPEI has provided single-source solutions for some of the most recognizable bridges in the world, including the fire-breathing Dragon Bridge (not pictured) in Da Nang, Vietnam, and the new San Giorgio bridge in Genoa, Italy (designed by world-renowned architect Renzo Piano).

Whether it's conservation, preservation, restoration or an accelerated bridge construction, MAPEI offers a variety of durable and long-lasting solutions for bridges. Those solutions range from structural strengthening, concrete admixtures and fiber-reinforced polymer (FRP), to decorative coatings, corrosion protection and waterproofing for protection against extreme weather conditions.

For every critical challenge faced on the jobsite, MAPEI's specialized products can offer the right solution. This pictorial showcases some of MAPEI's major bridge projects from around the world.

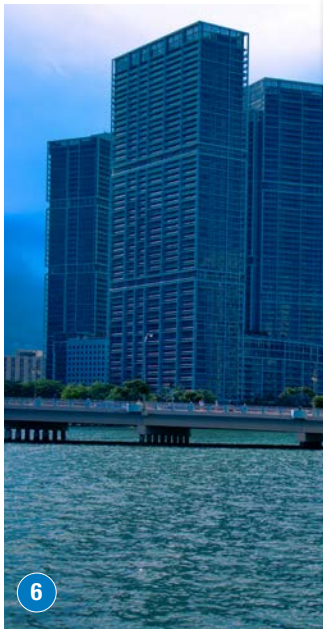
To view in detail how each project was accomplished, visit the "Projects" section at www.mapei.us.



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6

- 1 Lisewski Bridge – Tczew, Poland
- 2 Golden Bridge – Da Nang, Vietnam
- 3 San Giorgio bridge – Genoa, Italy
- 4 Rialto Bridge – Venice, Italy
- 5 Carroll Avenue bridge (formally the MD 195) – Takoma Park, MD, USA
- 6 Brickell Key Bridge – Miami, FL, USA
- 7 Zeeland Bridge – Zierikzee, Netherlands
- 8 Jacques Cartier Bridge – Montreal, QC, Canada



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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 and online trainings

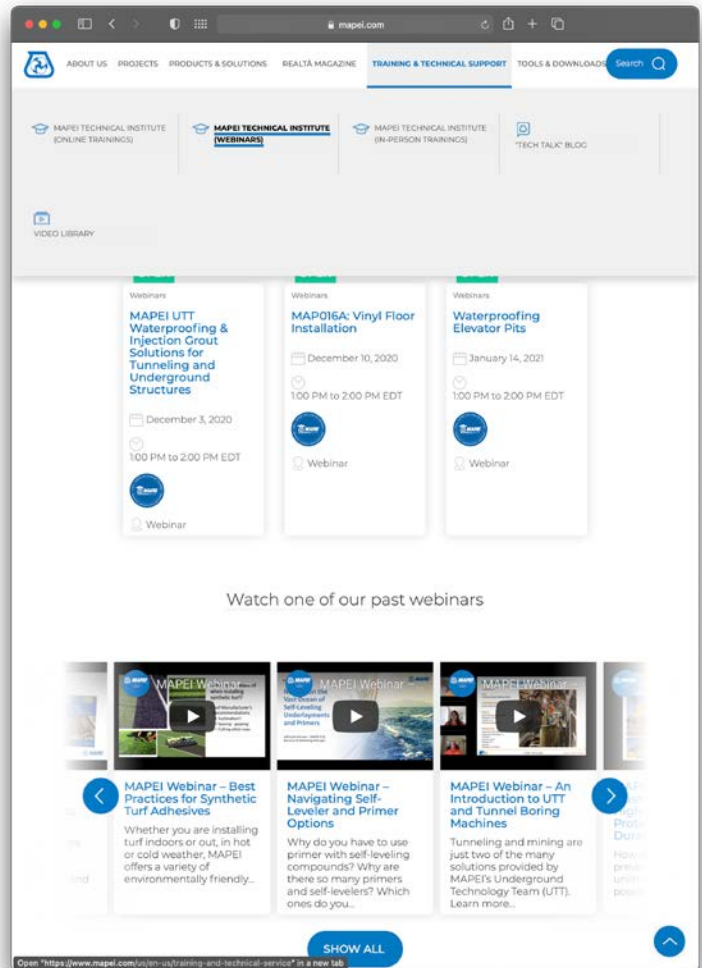
Throughout the COVID-19 crisis, MAPEI has continued to offer its MAPEI Technical Institute (MTI) education and training resources to the industry by utilizing a variety of methods.

We have continued to produce our MTI-TV video series highlighting problem-solving products, including moisture-resistant tapes, radiant-floor heating and **Keraflex**™ mortars. Through these videos, we have also addressed the problems themselves, including the need for quick patches, resurfacing and skimcoating, as well as overhead and vertical repairs.

Our online series of Webinars has proven to be popular. In 2020, we produced 25 Webinars covering topics from all our product lines. These Webinars are housed on our Website at <https://www.mapei.com/us/en-us/training-and-technical-service/webinars>.

We also provide online trainings, most recently for our **Mapeheat**™ Pro Installer program. Conducted through our MAPEI Online Webinar platform, these trainings are a part of the MTI Online Training Program and offer tile installers the opportunity to attend an abbreviated version of our MTI courses. Taught by MAPEI's industry-leading experts, including National Technical Presenter Sam Biondo, these courses combine practical information with installation tips and demonstrations of product applications.

For more information, to schedule a training or to attend a Webinar, please contact us at MapeiDigital@mapei.com. To see the full calendar of Webinars, visit <https://www.mapei.com/us/en-us/training-and-technical-service/webinars>.



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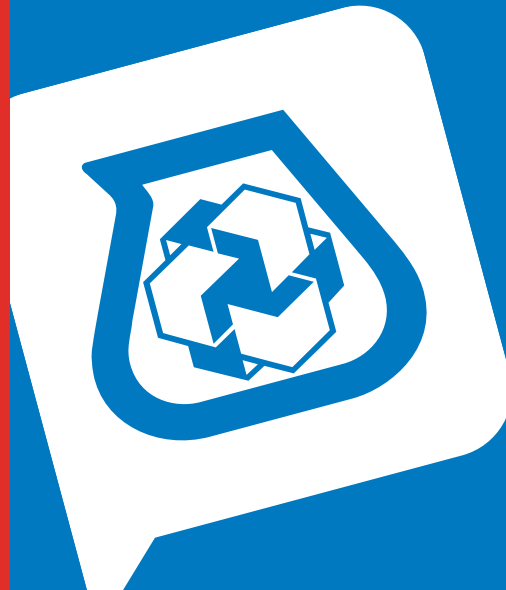
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TREAT
YOUR
FEET TO
Mapeheat™



HASSLE-FREE SYSTEM

- 4 Keraflex™ RS
- 3 **Mapeheat Mat**
- 2 Keraflex RS
- 1 Plywood or Concrete

Mapeheat Mat is a pre-built and pre-wired floor-heating fabric designed for easy installation under many types of flooring. It is available in over 70 sizes and can be ordered custom-sized to fit any space.

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- 4 Keraflex Super
- 3 **Mapeheat Cable** and **Membrane**
- 2 Keraflex Super
- 1 Plywood or Concrete

The *Mapeheat Cable & Membrane* floor-heating system offers integrated waterproofing and crack-isolation for interior residential spaces. Available in 33 lengths to accommodate areas both large and small.

Both systems are available in 120 V and 240 V, and are compatible with the *Mapeheat* thermostat of your choice.

Our easy-to-install, versatile and advanced **electric floor-heating solutions** are suitable for tile, stone, laminate, engineered wood and luxury vinyl tile/plank floors. No matter the shape or size of your room, there is a *Mapeheat* solution to heat your space from the floor up. For details, visit www.mapei.com.

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