concrete DECOR®
THE JOURNAL OF DECORATIVE CONCRETE
concretedecor.net
Vol. 13 No. 6 August/September 2013

White makes bright

PAGE 60

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FROM THE editor's DESK

Dear Readers,

Every once in a while, a buzzword or phrase captures the attention of our industry. "Concrete restoration" is one of the most striking recent examples.

Interest in restoration blossomed in the depths of the Great Recession as desperate contractors discovered a new, fast-growing and lucrative market for their services — former customers whose decorative concrete work had aged or deteriorated.

We address this hot topic in "Restoration & Repair," a spread that is the main feature of this issue of *Concrete Decor* magazine. We talked to decorative concrete professionals all over the country who are pursuing color restoration as a niche market. We asked them who their customers are, what kinds of services they're selling and about their favorite tips and tricks for restoring original color and sheen to patios, pool decks, kitchen floors, countertops and so on, across the spectrum of decorative concrete.

For another story in the spread, we checked in with a polished concrete specialist to examine repair strategies for polished concrete floors.

The construction industry now appears to be improving, or at least be on the verge of improving. But this topic isn't going away soon. The recovery could stall, for one thing, and if it does, fallback restoration (and maintenance) services will be bread and butter for a lot of people who read this magazine.

More obviously, a lot of decorative concrete will continue to fade and deteriorate over time. A lot of it won't, and some that appears to be faded will just be dirty. But it's fair to say that if you add restoration, repair and maintenance to your list of services offered, you'll be able to sell those services. If your market isn't there yet, it will be. It's as inevitable as the passing of time.

Enjoy your summer and enjoy this issue of the magazine.

Let me close with an announcement about the 2014 Concrete Decor Show: It's scheduled for Sept. 29-Oct. 3 in Fort Worth, Texas. Visit ConcreteDecorShow.com for more details.

Sincerely,

John Strieder
Editor

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Aurora Epoxy Dust is intended for use as a metallic epoxy floor system, countertop system, or other horizontal surface to create one of a kind unique designs to enhance any epoxy floor coating. Aurora Epoxy Dust has many advantages over other concrete coating methods. Unlike acid stains and standard coloring methods the pigments in this metallic epoxy reflect light rather than absorbing it creating incredible depth and dimension.

STONE BOND EPOXY —

Epoxy bonded stone is a custom blend of our epoxy and natural stone. It is the only overlay product that has been proven to increase the strength of the sub-base. It is also durable in all weather conditions from subzero to tropical, and is designed to bear heavy loads including automotive traffic. Standing water is eliminated because Natural Stone is porous. Water drains through making it the perfect product for pool decks, balconies, and driveways.

DUROGLOSS —

Durogloss is an Industrial Epoxy and Acrylic Urethane/High Performance Urethane system that creates an extremely durable surface for old and new concrete. Our epoxy can be custom tinted or paint chips can be added for unique custom color combinations.


Durogloss

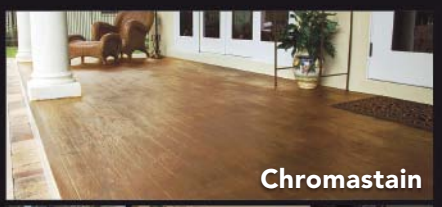

McKrete™ Spray On

MCKRETE™ SPRAY ON —

a functional and durable system composed of a blended acrylic for exterior and interior spaces. Sprayed on approximately 1/8 of an inch, it is designed to bond to old and new concrete. Extremely durable and stain resistant. Available in an infinite number of colors, patterns and textures to complement any décor. Ideal surface for pool decks, patios, walkways and even high traffic areas including driveways.

CHROMASTAIN —

An environmentally friendly water based stain designed specifically for porous substrates including concrete, acrylic and concrete overlay systems. It penetrates, adheres to the surface and is self-sealing. Base color blending allows for hundreds of color shades. The varied color combinations and creative designs make this product ideal for both outdoor and indoors.


Chromastain

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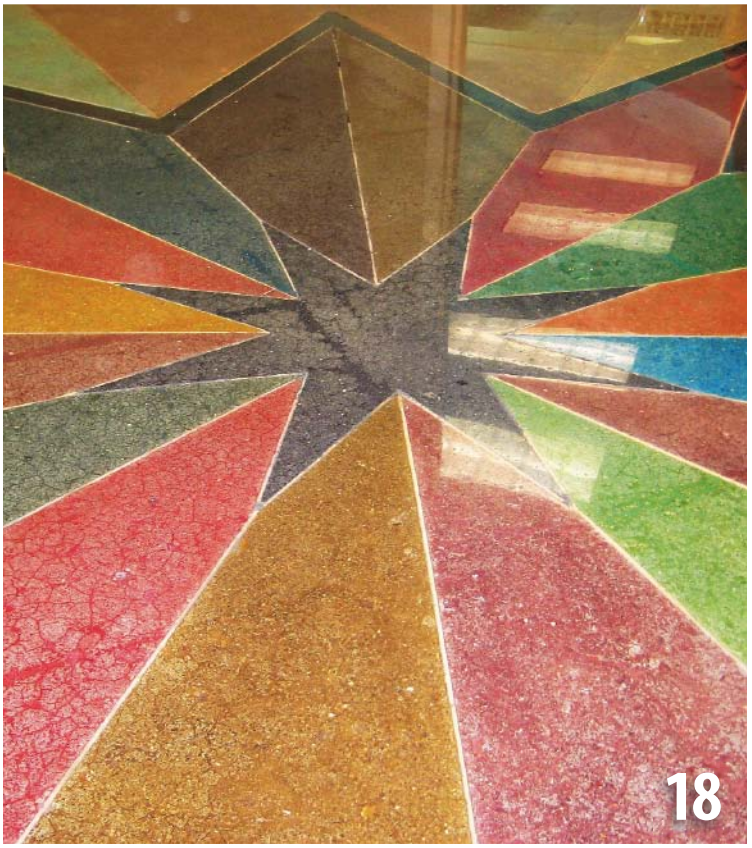

FEATURES

BUSINESS & INDUSTRY

On the cover: In order to achieve a Solar Reflective Index score of 30 or better, T.B. Penick & Sons Inc. utilized Type III cement at the Sunnylands Center & Gardens, which serves as the visitor center and access point to The Annenberg Retreat at Sunnylands, in Rancho Mirage, Calif. For more about how Type III and white cements can improve color projects, see page 60.

Photo courtesy of T.B. Penick & Sons Inc.

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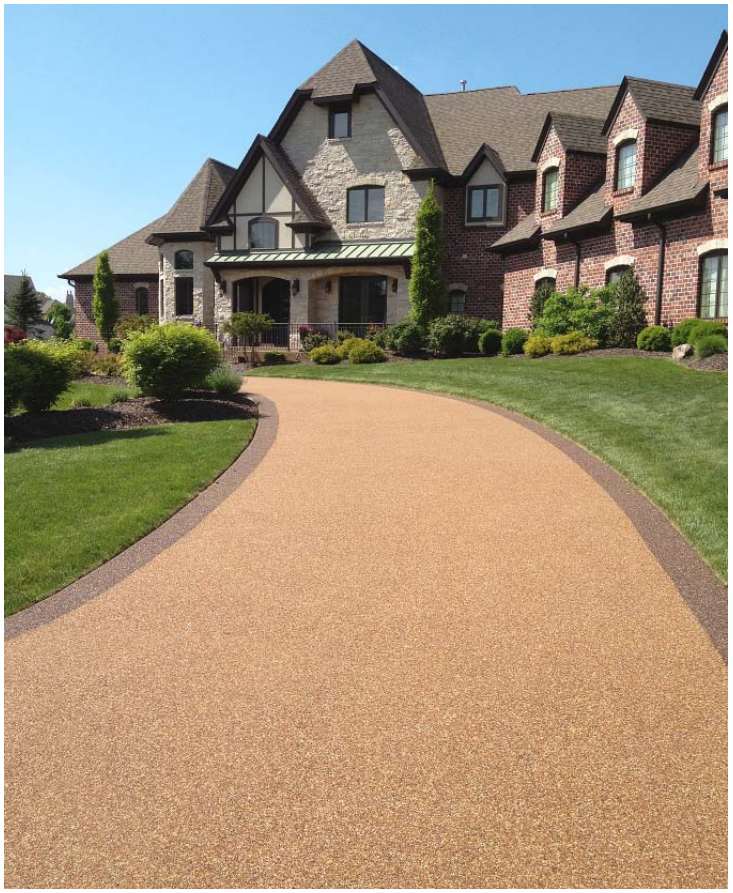
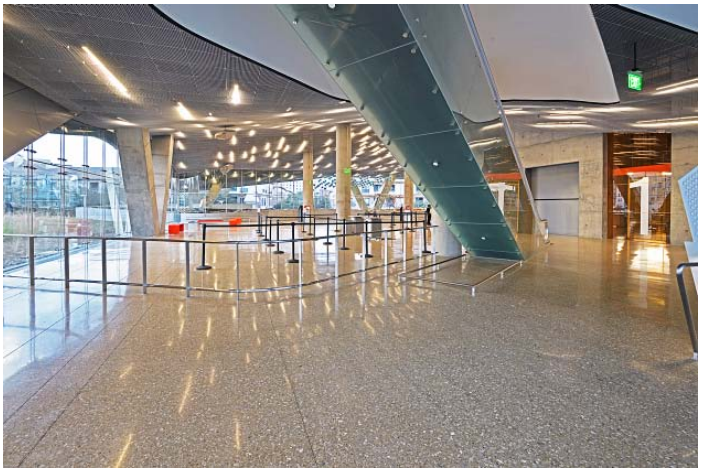
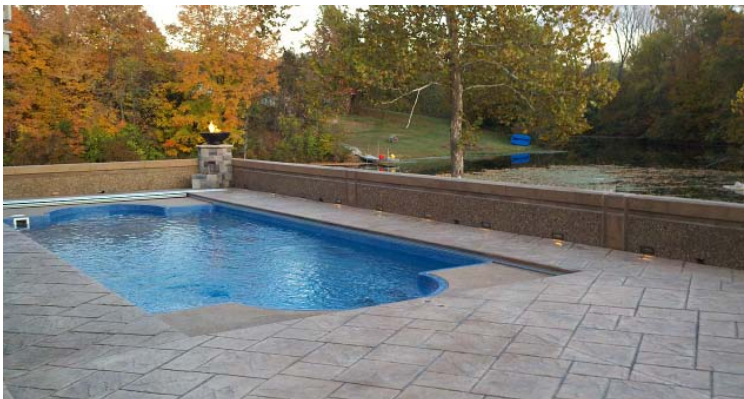
DEPARTMENTS







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Which is why our grouts mixed with *Planicrete UA* solve problems.

MAPEI Products Used:

- ***Planicrete*® *UA*** universal admixture
- ***Ultracolor*® *Plus*** premium grout
- ***Keracolor*™ *U*** unsanded grout

Construction on the Centre for Health Sciences at George Brown College (Toronto, ON) included an 8-story student residence and recreational complex. When the forms were removed, irregular coloring was noted in the concrete. Ground Floor Industries (Milton, ON) combined MAPEI's *Planicrete UA* with *Ultracolor Plus* grout and *Keracolor U* unsanded grout in pewter to provide the monolithic color the school wanted. After the first 50,000-square-foot (4 645 m²) application, the school was so pleased with the results that they asked GFI to finish the floors in an additional 75,000 square feet (6 968 m²) of the building.

Scan here to learn more about *Planicrete UA* and decorative concrete.

www.mapei.com

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concrete DECOR® EXPERTS

Doug Carlton *operates Carlton Concrete Inc., in Visalia, Calif. He can be reached at carltondoug@comcast.net. See Doug's column, "Carlton's Corner," on page 16.*

Wade Christensen *is vice president and marketing manager of Niagara Machine Inc., a distributor of industrial surface preparation equipment. Contact him at (800) 622-2048 or wade@niagaramachine.com. See Wade's article on page 28.*

David Loe *is president of Lythic Solutions, maker of Lythic Densifier. Reach him at davidloe@lythic.net. See David's article on page 52.*

Joe Reardon *is a concrete products group specialist at Prosoco. A member of the American Concrete Institute and the Construction Specifications Institute, he also serves as a founding member and board member of the Concrete Polishing Association of America. Contact him at jreardon@prosoco.com. See Joe's article on page 50.*

Chris Sullivan *is vice president of sales and marketing with ChemSystems Inc. He has led seminars and product demonstrations throughout North America. Contact him at questions@concretedecor.net. See Chris' column, "Concrete Questions," on page 40.*

Joe Zingale *is the flooring group specialist for CTS Cement | Rapid Set, a manufacturer of specialty fast-setting cement repair products. Reach him at jzingale@ctscement.com. See Joe's article on page 42.*

Talk back! Weigh in online at ConcreteDecor.net

INDUSTRY NEWS

2014 Concrete Decor Show scheduled for fall in Fort Worth, Texas

Professional Trade Publications, the company that publishes *Concrete Decor* magazine, has announced that the 2014 Concrete Decor Show, the premier trade event focused on the decorative concrete industry, will move to the fall.

The event will take place Sept. 29 through Oct. 3, 2014, at the Fort Worth Convention Center in Fort Worth, Texas.

"The fall time frame provides distance from multiple springtime industry events, offering attendees and exhibitors a unique opportunity to get trained on techniques and new products just before the busy spring and summer seasons," said Bent Mikkelsen, CEO of Professional Trade Publications and owner/promoter of The Concrete Decor Show, in a news release.

The show is designed around educating contractors on the latest techniques and products, as well as expanding their concrete skills.

(877) 935-3906

www.concretedecorshow.com

American Shotcrete Association calls for annual project award entries

The American Shotcrete Association has opened its ninth annual ASA Outstanding Shotcrete Project Awards Program to recognize excellence and innovation in projects in which the application of shotcrete has played a significant role. Entries will be accepted until Oct. 1, 2013.

(248) 848-3780

www.shotcrete.org

Inter-Tool acquires Leitch & Co.

Inter-Tool LLC has acquired Leitch & Co., a leading manufacturer of stone and concrete polishing products with more than 80 years of history.

Leitch & Co. was the first company to manufacture a hand-held planetary machine for polishing stone and concrete — the DS301 — and Inter-Tool plans to continue to innovate.

(800) 926-9244

www.inter-tool.com

www.leitchco.com

Quest offers Scanmaskin, Blastpro

Quest Building Products has teamed up with two manufacturers, Scanmaskin USA and Blastpro Manufacturing. Scanmaskin and Blastpro machines are now available for purchase or rental at Quest Building Products in Anaheim, Calif., or San Diego.

Scanmaskin is a manufacturer of floor-grinding, surface preparation and polishing equipment. Blastpro Manufacturing is a manufacturer of portable shotblasting machines of all sizes.

(714) 738-6640

www.questbuilding.com

Scanmaskin's new distributors

Since Scanmaskin entered the United States marketplace last fall, Scanmaskin USA has been steadily increasing its distributor network. Through their new strategic partnerships with companies specializing in the decorative concrete industry, Scanmaskin now covers the entire continental U.S. — from the West Coast all the way to New Hampshire.

Most recently, the company has partnered with Jon-Don Inc., Quest Building Products and Majik Diamond Supply.

Scanmaskin is a manufacturer of floor grinding, surface preparation and polishing equipment.

(425) 628-1212

www.scanmaskin.com

Concrete Countertop Solutions recently held its Second Annual Z-Counterform Photo Contest. Seen here is the winner in the Most Creative Staining/Finishing category, which was awarded to Joseph Ping of Columbus, Ind. For more details on the contest and other winners, see page 11.

event calendar

Concrete Sawing & Drilling Association Fall Meetings

Sept. 5-6, Annapolis, Md.

www.csda.org

Technology Forum No. 34 Strategic Development Council

Sept. 5-6, Indianapolis, Ind.

www.concretesdc.org

American Society of Concrete Contractors Annual Conference

Sept. 12-15, Columbus, Ohio

www.ascconline.org

International Concrete Polishing & Staining Conference

Sept. 12-15, Duluth, Ga.

www.icpsc365.com

American Concrete Institute Fall 2013 Convention: "Innovation in Conservation"

Oct. 20-24, Phoenix, Ariz.

www.concrete.org

VersaFlex achieves second ISO level

Coating and sealant maker VersaFlex Inc. has added another level of ISO 9001:2008 to its long-standing quality management system. Earlier in 2013, the VersaFlex Product Development and Testing Lab achieved ISO 9001:2008 "Design Certification."

The ISO 9001:2008 certification demonstrates the company's commitment to providing consistent, high-quality coating products to the marketplace. VersaFlex utilizes a systematic custom-built monitoring and evaluating process of raw materials to ensure that each batch of product meets the required guidelines established.

VersaFlex has been an ISO 9001:2008 certified manufacturer since January 2009.

(800) 321-0906

www.versaflex.com

New GranQuartz store near D.C.

GranQuartz has recently opened a new store in Beltsville, Md., close to Baltimore and Washington, D.C. The 8,000-square-foot store has a warehouse and showroom. It will offer one-day shipping to parts of North Carolina, Maryland, Virginia, Pennsylvania, Delaware, New Jersey and New York City.

(800) 458-6222

www.granquartz.com

ACI scholarships available

The ACI Foundation, a wholly owned and nonprofit subsidiary of the American Concrete Institute, has opened its student Fellowship and Scholarship program for the 2014-2015 academic year. The application process is open through Oct. 15, 2013.

(248) 848-3179

www.scholarships.concrete.org

NEW faces

Mitch Bloomquist, managing director, Tilt-Up Concrete Association

Lee Nabb, business development manager, Midwest, Dur-A-Flex Inc.

Daniel Owen, president and CEO, Arizona Polymer Flooring

D.J. White, branch manager, Charlotte, N.C., Niagara Machine

Pennsylvania artisan wins Z-Counterform Photo Contest

The rules for the Second Annual Z-Counterform Photo Contest from Concrete Countertop Solutions were simple: at least one Z-Counterform product had to be used in the construction of the countertop. Once all of the entries were in, the photos were posted on the company's Facebook page and open for voting for one month. Then, the owners of Concrete Countertop Solutions selected their favorites based on difficulty of pour, size, shape, overall aesthetic appeal and photo quality. Award placements were selected based on the Facebook voting process.

The project shown here was the winner in the Best All Around category. It's the work of Tammy Policz, of Jefferson, Pa.

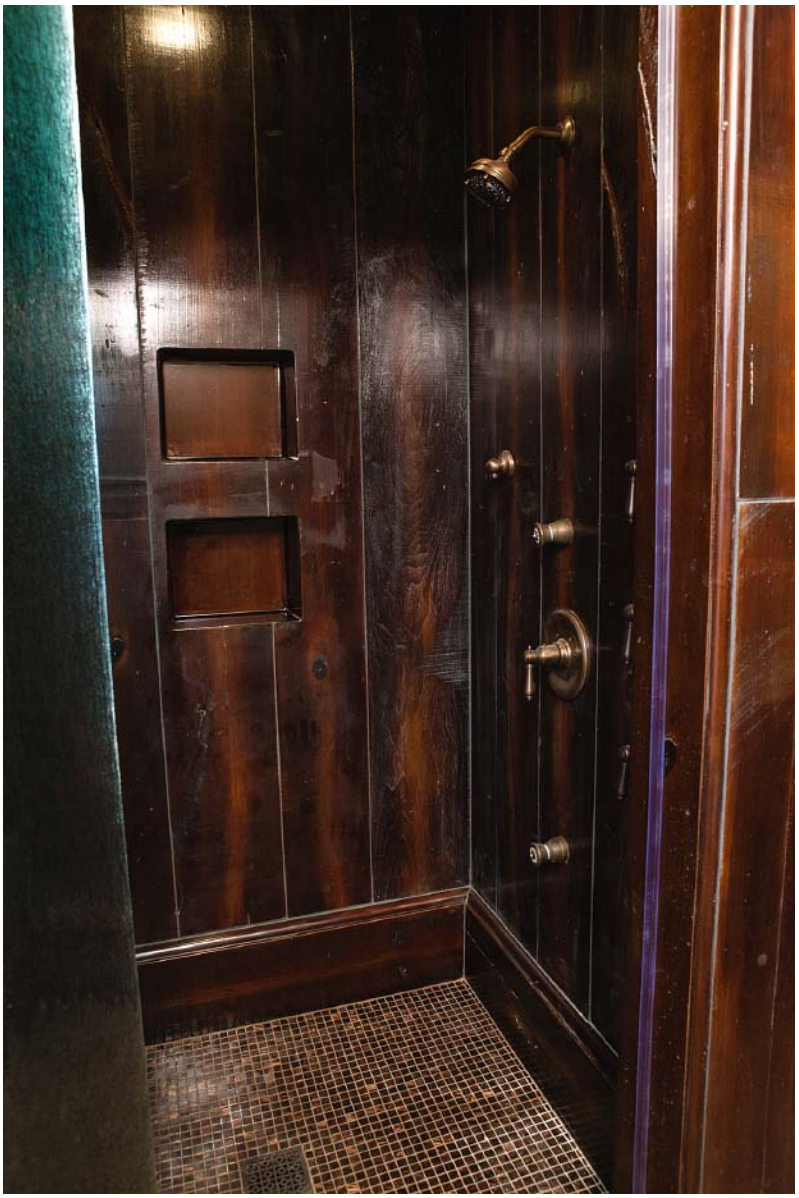
Two take four decorative concrete awards at 2013 ARDAs

Four decorative concrete projects were among the winners in the 2013 American Residential Design Awards, announced in July by the American Institute of Building Design.

JM Lifestyles LLC, fabricator Jeff Kudrick's New Jersey countertop and casting company, took home three of the four prizes in the Decorative Concrete category.

The company won 1st Place, Residential New or Renovation, for a shower lined with concrete textured and stained to look like wood. "The large panels keep grout lines to a minimum for easy cleaning and realistic appeal," states a description submitted by the contractor. "The molded wall niches are water tight and functional. The large base molding, elegant crown molding and molded ceiling panel adorn the enclosure and create a rich look that accommodates the details of the rest of the room/home."

It took 2nd Place in the category as well, for a basement countertop of translucent concrete inlaid with fiber optics.



JM Lifestyles also won 1st place in Commercial, New or Renovation for display tables for the women's shoe department of a Selfridges department store in London. "The designers, JFA Architecture, in France, required incredibly tight tolerances of 1 mm on edges, seams, and dimensions," states the entry. "The irregular but exacting shape required 3D modeling and CNC master fabrication."

The Outdoor Living category was won by Clay Johnson, Johnson Designs, Trinidad, Calif., for cast-in-place pillars throughout a primary and guest house. Each column was cast in custom steel forms out of pigmented concrete.

The ARDA entry form states that the Decorative Concrete Awards "showcase the techniques, technologies and green benefits of using architectural and decorative concrete in the built environment, both at home and in the community. Judging is based on aesthetic value and use of color, superior design and craftsmanship, innovative use of materials and methods, use of recycled materials, durability, sustainability, and overall creativity."

(800) 366-2423

www.aibd.org/arda

PRODUCT NEWS

CLEANING

Dzolv removes uncured coatings from tools and equipment

VersaFlex has announced Dzolv, a solvent designed to break down and strip away uncured polyurea, polyurethane, epoxies and polyester resins. Dzolv is designed to safely and effectively clean your spray gun and equipment parts.

VersaFlex Dzolv is a water-soluble organic solvent, containing no aromatics or petroleum distillates. Dzolv is designed to provide maximum stripping effectiveness while incorporating a high flash point and low toxicity. Dzolv replaces most industrial solvents, such as chlorinated hydrocarbons, when used on cured polymers.

Dzolv is available in one-, five-, and 55-gallon containers.

(800) 321-0606

www.versaflex.com

COUNTERTOPS

Cheng adds two colors

Cheng Concrete has added two new colors to its Pro-Formula Concrete Mixes.

Mohave Gold is a light yellow tone with subtle gray and green hues. Portabella is a warm gray tone with subtle brown hues.

Both colors are available in the Countertop Pro-Formula and Outdoor Concrete Pro-Formula mixes.

(510) 849-3272

www.concreteexchange.com

A less-cumbersome installation cart

The Omni Cubed Pro-Cart AT2 provides a solution to the challenges associated with large and cumbersome countertop installation carts. Pneumatic casters dampen vibrations and enable travel across rough terrain, and the cart's high ground clearance allows easy maneuvering over curbs.

The cart features collapsible clamp uprights for easy countertop removal and tilting of large pieces onto cabinets. The cart stays attached to the countertop while climbing stairs, and the casters are designed to allow resting on stair treads of varying depths.

For ease of storage and sliding down the center of A-frames, the included folding kit and collapsible uprights enable folding of the AT2 into a very compact design. The AT2 features large 10-inch casters, has a rated weight capacity of 1,000 pounds, and still weighs in at less than 65 pounds.

(877) 311-1976

www.omnicubed.com

CONCRETE MIX SYSTEMS

Ardex introduces Ardiflo System

Ardex Americas has introduced the Ardiflo System, which proactively addresses concrete construction issues through a specified finishing method for new concrete — including an integrated system of moisture control and self-leveling underlayment products.

In new construction applications, the Ardiflo System saves time and labor costs by eliminating the traditional steel-trowel step in the finishing process. Using this system, the contractor will only place, consolidate, strike off and refloat or restraighten the surface. These steps would be followed with a layer of self-leveling underlayment. In some cases, the system can be installed using a special epoxy primer designed to replace a curing compound, mitigating any future risks resulting from moisture emissions.

The resulting finish delivers a concrete substrate capable of meeting the most demanding flatness and leveling tolerances, eliminating unplanned leveling and delays.

The Ardex Ardiflo System offers equipment ranging from traditional mixing barrels to standard, medium and high-capacity pumping systems. Each system is uniquely designed to match capabilities with the project parameters. Additionally, each system is available for rent or purchase with a broad range of training and support options.

(888) 512-7339

www.ardexamericas.com

DYES

New Clemons color charts

Clemons Concrete Coatings has updated its Super Dye color charts. The new chart contains improved color depictions, giving true-to-life color representation and dual-tone colors depicting how the dye appears when polished or with a sealer.

Super Dye is a universal interior dye that can be diluted with acetone or water.

(615) 872-9099

www.ccc-usa.com

POWER EQUIPMENT AND TOOLS

Honda introduces engine for rammers

Honda has introduced an all-new GXR120 general-purpose engine, a model uniquely developed as an ideal source of power for rammers.

The Honda GXR120 is capable of meeting the high demands that rammers require of the engine, frame and operator. With a displacement of 121 cc, the engine can appropriately power 110-pound to 175-pound rammers at multiple altitudes with ease. Additionally, a new, special cast-iron cylinder sleeve and a high-carbon-steel, dual-ball-bearing crankshaft provide improved engine strength for rammer applications.

The GXR120 includes a newly designed and very compact muffler to help reduce operation noise by 1 dB over the current GX100.

(770) 497-6400

engines.honda.com

Doosan's excavator for tight quarters

Doosan is adding more power, performance and speed to the 16-ton excavator market with the DX140LCR-3, providing greater capabilities for site development, commercial construction and street development projects.

The DX140LCR-3 excavator is a reduced-tail-swing machine that offers reduced machine length and added maneuverability, presenting contractors with an ideal machine for operating in tight quarters. The tail swing radius is only 5 feet, resulting in a tail swing overhang of just 9 inches over the side of the machine. At the same time, the overall track length provides exceptional stability for digging and lifting operations. An optional 102-inch-wide dozer blade enhances the machine's versatility.

www.doosanequipment.com

A faster cordless combihammer drill

The new Hilti TE 30-A36 is a cordless combihammer drill that drills and chips into concrete up to 40 percent faster than its corded competition due to its high-efficiency brushless motor and higher-mass hammering mechanism.

By combining the high-capacity battery and utilizing Hilti brushless motor technology, this cordless solution delivers single-impact energy of 2.7 foot pounds and a full hammering frequency of 4,500 impacts per minute.

(800) 879-8000

www.us.hilti.com

SCREEDS

Mako's new screed support systems

Mako Enterprises is offering a new innovation in screed support systems. Mako Screed Support Systems maintain the finished elevation of concrete while increasing levelness and flatness and reducing production time.

Voted a 2013 Most Innovative Product by industry professionals at the World of Concrete, Mako Screed Support Systems are perfect for slab-on-grade, elevated decks, superflat floors, bridges, thickened slabs and leveling subgrade. They are highly accurate, extremely versatile and virtually indestructible.

The patented system consists of a driver and FinCap screed support. The Mako driver quickly and accurately allows one person to set multiple FinCap screed-pipe support locations in seconds.

(855) 246-6256

www.makoproducts.com

SCARIFIERS AND SHAVERS

The Smith self-propelled shaver

A self-propelled model in the FS3 Series built by Smith Manufacturing, the Smith FS350 Concrete Shaver features a 15-inch-wide stacked diamond-impregnated shaving drum. A diamond shaver works at higher rpm than a scarifier.

The shaver is powered by an electric motor with a vacuum port for dust extraction. It can be used for: preparing spalled floors or failing slurry caps; reducing concrete risers, deflections, or curled joints; profiling for new overlays; leveling uneven surfaces or floor undulations; shaving off failed coatings, coverings or overlays; exposing aggregate to seal, densify or polish; or cleanup for coatings or polishing.

(800) 653-9311

www.smithmfg.com

CARLTON'S CORNER

Knowing When and Why to Say No

by Doug Carlton

At first, everything seemed perfect as my salesman and I finished setting up our booth for the annual home design and remodeling show in Visalia, Calif. Our exhibit location was ideal, our stamp and stain samples strategically located. The weekend crowd was near maximum capacity and everything seemed ripe for booking plenty of new accounts.

We didn't worry when the first few folks asked if our company offered a stampable overlay service — we didn't, so we directed them to a competing contractor located a few aisles away. But by the time a dozen homeowners asked for a service we didn't offer, it became painfully apparent the local decorative market had changed beyond our staining and stamping services.

I'm not fond of turning away work, but this is exactly what my salesman and I repeatedly did, because saying "No, I'm sorry but we don't offer a stampable overlay" was better than the risk of performing a service my crew had yet to master.

Over the last couple of decades I've had to say no to billionaires, movie producers, neighbors and relatives. No one likes to be told no, because "no" is the opposite of whatever it is they're asking for.

However, telling a prospective or current customer no can be the most profitable task a contractor performs. The art of saying no — without upsetting a client — is one that will eliminate sleepless nights and anxious days, trust me.

I've listed the top three reasons a decorative contractor should say no. After that, I will offer an example of how "no" can take your decorative concrete business to a new level.

Red-flag customers

You know the ones. They are potential customers who will not be happy regardless of the discount, regardless of the quality. They are complicated souls who always have something to complain about. Sometimes they're perfectionists, sometimes they are the opposite. The end result is almost always conflict and the net result is rarely profitable for the contractor. They're the customers who should have heard "no" long before trouble begins.

Decorative concrete is not for everyone. Some folks are not a good fit for our industry, but have yet to realize this fact. They must be told no.

Some buyers buy in haste. They are busy and don't have time for samples, colors, designs, meetings, education or any other front-end work that is such a necessary part of the decorative concrete industry. They, too, should be told no.

Sometimes "no" is really a stern way to take control of a project. It forces a customer to slow down and focus on making a decision that only they can make. I recall a time or two when we actually pulled off projects by saying no to moving forward until the owner made a crucial decision or we found common ground. Not saying no meant having to deal with a compounding problem at job's end. My advice is to never let conflict go. Always find common ground, even if this means saying, "Sorry, but no."

Lack of experience

I'm sorry to say this, but your skill level, in some fashion, is subpar compared to other concrete artisans. Don't take it personally — even the most skilled

decorative artist is no match for some aspect of your decorative skill.

On top of that, our industry is infinite and constantly changing whether we like to admit it or not. This is neither good nor bad. It's just the evolutionary process. Decorative concrete is in a never-ending flux of improvement and change, and eventually it will move beyond our level of skill.

My point is, none of us know everything about decorative concrete.

This is why you must learn to say no when a customer asks for something you're not skilled in. In truth, it's not fair to your crew or customer to tackle a decorative project beyond your area of expertise. I receive emails and calls regularly from contractors who wandered outside their area of expertise and are now searching for an easy fix. They should have said no instead.

A high-quality decorative concrete project is a merger between the right product and skillful hands. Take either from the equation and the result is not good. It takes time to build expertise, and it takes time to find the best products too. There are hundreds of examples of subpar decorative installations in your area alone that do nothing good for our industry. They only exist because someone failed to say no.

Lack of trained manpower

Most decorative concrete installations are timing-sensitive. This means you have a limited window to color, stain, smooth, stamp, polish or trowel. If this window closes before your work is complete, the result can be costly.

Technology and innovation cannot replace the hands of a skilled artisan who can complete work in a timely fashion. It comes down to skill above all else.

Mastering the many facets of decorative artistry takes years, maybe decades. Understanding your crew's limitations is a vital part of building a solid reputation of quality work. Saying no to projects beyond the capabilities of your crew is not only recommended but prudent.

Taking your business to the next level

Sometime in the near future you will have a customer request a type of decorative concrete installation you're not 100 percent comfortable performing. Instead of saying no, why not use this opportunity to advance your skill by bringing in the assistance of someone who specializes in this unfamiliar request?

I recommend being honest with your customer by explaining why, or how, their project is unique and that you would like to bring in outside help at no extra cost. This offers a perfect opportunity for you to advance your skill while satisfying your customer's request.

Manufacturers and materials suppliers can offer you the names of qualified individuals who can assist with this type of teaming. Feel free to email me for a list of possible candidates too.

Doug Carlton operates Carlton Concrete Inc., in Visalia, Calif. He can be reached at carltondoug@comcast.net.

Photos courtesy of Custom Concrete Designs FL

ARTISAN
IN CONCRETE

Carlos Perez, Custom Concrete Designs FL

West Palm Beach, Fla.

by Joe Maty

When he first set out to make his way in the construction business, Carlos Perez didn't really figure on decorative concrete as his career path.

But once he took a detour in that direction, it proved to be a wise change of course.

At just 34 years old, Perez is the owner and manager of Custom Concrete Designs FL, in West Palm Beach. The relatively new business is making its mark in South Florida and beyond. Perez is capitalizing on his South American origins and connections to do business in Central and South America in addition to his Floridian home base.

Perez came to South Florida by way of New York City, where he moved in 2000 from his native Colombia. He worked as a remodeling subcontractor in Gotham before relocating to West Palm Beach and starting up a remodeling business there in 2002.

In West Palm Beach, Perez took note of the growing popularity of polished concrete and other decorative concrete applications. He had seen examples of the polishing process, but was not familiar with it first hand. That changed when a remodeling customer asked if Perez would polish the concrete in the garage of his upscale home.

One thing led to another, as they say, and Perez soon experienced the gravitational pull of decorative concrete as a powerful force in his career trajectory.

Not that the journey has gone without a hitch. Perez's initial foray into the trade didn't pan out as he'd expected, as a partnership with a supplier of polished concrete materials and equipment didn't hum along so smoothly.

Undeterred, Perez in 2009 decided to fly solo and start Custom Concrete Designs FL, propelled by emerging opportunity in the decorative concrete field. The potential was apparent in the high-end residential segment that was a major part of his remodeling business, he says. Customers of his remodeling work increasingly inquired about decorative concrete, asking Perez to take on those types of jobs.

Perez says that while he has learned the science of decorative concrete on the job — with a great deal of help from materials experts and industry programs — he brings an eye for art and design to the work too.

"I come from a family of artists," he says. His mother taught art in school and operated an arts and crafts shop as well. Later, attending Saint Thomas University in Colombia, he used his talent for art in the creation of projects and models in construction classes.

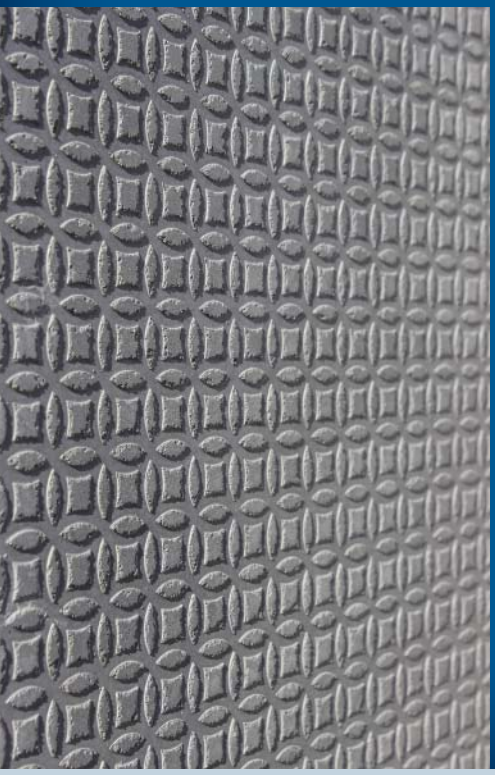
"I was always coming up with new ideas. Even with my remodeling company, I was doing creative things with paint and finishes, and I moved that into concrete. I'm 100 percent sure I don't know it all, and I am always learning. I go to shows and share knowledge with other guys, and I combine techniques and come up with different things."

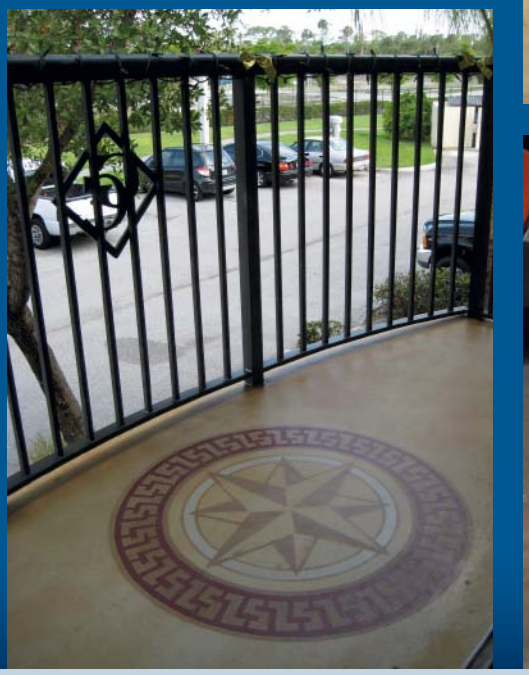
He says knowing the technology and the materials is crucial as a foundation. "You can have the skills, but if you don't know the ingredients for the cake, it's not going to taste good."

Seizing the opportunity

While the deal with the polished concrete partner didn't take off, the brief business venture did provide an introduction to the decorative concrete community and key suppliers. Overlay products and systems have been particularly important as a key growth driver for his company, Perez says.

"With overlays, you have a variety of decorative options,"





he says, listing aggregates, terrazzo finishes, integral color, stains and other treatments as options with cementitious materials of this type.

Also proving a good sell in retail outlets are microtoppings, where a hard-troweled look can be produced with multiple layers of the material and a urethane sealer, Perez says.

"People love that marbleized, Venetian plaster kind of look," he says.

The company's portfolio bulges with imaginative uses of color and decorative effects — colored and terrazzo overlays with 3-D stencil designs and the use of a wide variety of aggregates, including conch shells, granite, petrified wood, colored glass and glow-in-the-dark seedings. The portfolio extends to precast exterior cladding panels and countertops, polished concrete, stamps, stencils and various types of repair and restoration.

Perez credits a trio of project foremen — Fabio Castillo, Giovanni Calix and Garemias Quinonez — with playing pivotal roles in the company's success. All are expert in facets of the decorative and restoration trades, he says. Castillo is particularly skilled in concrete polishing, while Calix and Quinonez focus more on decorative stamping, microtoppings and precast materials. The company's employee ranks now stands at 12 people.

Custom Concrete Designs is also beginning to build an international portfolio, with jobs in Perez's native Colombia and in Panama. These projects are more industrial in scope — warehouse, factory and parking-garage repair and restoration work.

"There are good opportunities there," he says of South and Central America. "There is a lot of competition in Florida and America in general. The competition is less down there, and there are fewer companies with these capabilities. It's a good market and opportunity for us."

Demanding projects

One recent, notable project that put Custom Concrete Designs' emerging range of capabilities to the test involved a two-story structure in Miami's Design District. The company addressed imperfections in the exterior poured-in-place concrete exterior — left by formwork — with patching and application of a thin microtopping and protective sealer. The company also collaborated with a metal subcontractor to produce integrally colored concrete and steel composite-panel box inserts for the building's window fenestrations. The job demanded precision in production and installation, as the rectangular frames each measured approximately 4 feet wide by 13 feet high and weighed 1,700 pounds.

Custom Concrete Designs faced a formidable task of a much different type at a SABMiller brewery in Medellin, Colombia, where the company was summoned to formulate and execute a repair and restoration program for seriously damaged and degraded concrete floors. First there was the challenge of selling facility managers on the need to invest in effective solutions. These measures included extensive repairs to damaged concrete around expansion joints, heavy shaving and grinding of the flooring, and use of high-performance repair materials and diamond grinding and polishing.

Perez says his company was approved for the job after the client sent a plant engineer to have a look at a massive floor-restoration project executed by Custom Concrete Designs at a flower warehouse in Miami — a grind-and-polish job using a colloidal silica densifier and high-performance polyurethane sealer.

Aside from the scope of the technical challenges of such a massive repair and restoration assignment, the SABMiller project offered a stark lesson on the most basic aspects of doing business in a developing economy.

"It's not like America where everything is easy to get, just by walking into a Home Depot," he says. "It was impossible for us to get a 6-inch scraper" — the simplest of hand tools. This had to be express-shipped from Florida, along with other materials and equipment for the job.

Nonetheless, he says, "It's exciting to expand my business to my home country. I don't call it headaches, I call it challenges."

Limitless variety

No matter the geographic location, Perez says educating the customer is the heart of his credo.

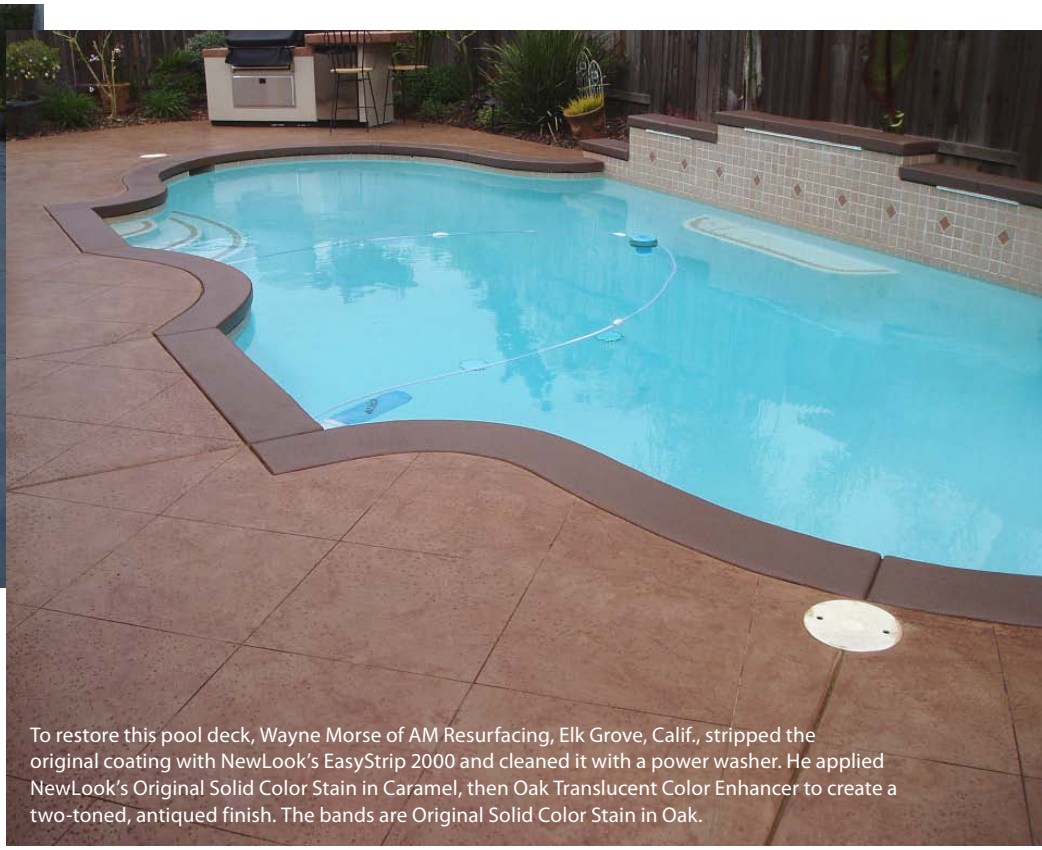
"Don't hesitate to explain how you build things," he says. "This will allow you to explain how things can go wrong, what it takes to do things right."

This mandate extends to working with designers as well, most of whom get their ideas from glossy publications that serve up exquisite images of concrete artistry, but don't carry a disclaimer that actual results may vary.

"They need to know how that gets built, how it gets done," he says. "We are manufacturing at the job site, not with a machine where you can control everything. It's a little more tricky for us, with temperature, humidity and other conditions. If you are only focused on selling the job, and don't educate the customer, a lot of things can go wrong."

www.cretepolishing.com

Photos courtesy of AM Resurfacing, NewLook International Inc.



To restore this pool deck, Wayne Morse of AM Resurfacing, Elk Grove, Calif., stripped the original coating with NewLook's EasyStrip 2000 and cleaned it with a power washer. He applied NewLook's Original Solid Color Stain in Caramel, then Oak Translucent Color Enhancer to create a two-toned, antiqued finish. The bands are Original Solid Color Stain in Oak.

The Rewards & Realities of Color Restoration

by Joe Maty

Unlike a fine wine, decorative concrete does not always age well.

And a decade or two after the first massive surge in popularity of decorative concrete, plenty of owners of residential and commercial property are realizing that their patterned, textured and colored concrete does not look like it once did.

One man's loss can be another man's gain, though, and so it goes in the decorative concrete business if restoration work has a place in the portfolio.

Just ask Kevin Brown, owner of KB Concrete Staining, in Mira Loma, Calif. He sensed opportunity in the restoration niche because "few were doing it," he says. The competition was less intense, and "the chances of getting jobs were a lot better. There are lots of people pouring concrete. Not so many are doing restoration."

Brown started his own business, doing concrete flatwork in 1993, and decided to focus primarily on restoration around 2002 with a new company name, the one he uses today.

Echoing the theme is John F. Pla, president of RestoraCrete, a Los Angeles-based company that has launched a business model focusing on concrete color restoration offered by a network of companies that license the RestoraCrete program of materials and procedures. The network currently totals six businesses, all in California.

Part of an extensive renovation at the Georgia Dome, home of the Atlanta Falcons, this concrete was given a facelift using L. M. Scofield Co.'s Scofield Revive Color Refresher in a custom color.

Photo courtesy of L. M. Scofield Co.

"Business is growing," says Pla, adding that his concept for the company emerged from recognition that the inventory of existing decorative concrete in Southern California was immense — and that this concrete frequently was showing its age, in some cases not that many years after installation. "These homes are just getting older. These are the homes built between 2000 and 2005-2006, coming to an age where the integral color needs a facelift," Pla says.

Can you bring back the zing?

For RestoraCrete, the typical concrete restoration customer is an owner of a relatively new home of perhaps eight to 15 years of age, with a stamped or other type of decorative concrete surface on the driveway, patio, pool deck or another architectural surface. Integral coloring is the predominant coloring medium, and the owner is looking to bring back the zing, often indicating a preference for a mottled look.

Thus, a specialty for RestoraCrete is an "antique" look, characterized by color contrast and variation, but with predictability so the owner gets the color she chose from samples.

Pla says RestoraCrete follows an approach that begins with a thorough review of various options with the client, ranging from tearing out the decorative surface and installing a new one, which is costly, to a band-aid remedy of applying a new sealer coat for a cosmetic boost. "What will that look like in three, four or five years?" he asks. "Eventually you have to strip it."

That brings the discussion to the relatively economical but effective option of restoring the color and appearance of the decorative surface itself.

"The challenge is selling the customer on a viable solution, going over the budget aspects and managing expectations," Pla says. Also crucial is employing a well-trained crew and successfully scaling up an approved color sample to an installed result. This solution is not bargain-basement in cost but delivers real value, Pla submits.

Variation and versatility

Executing the restoration project successfully begins with adequate preparation — removal of any existing sealer, thorough cleaning, and if needed, application of a mild etching product to facilitate stain penetration. RestoraCrete contractors employ a system centered on solid-color, water-based stain, and they add an antiquing effect with application of another product, a translucent stain.

Stripping of existing sealers or coatings is typically done with a biodegradable water-based product. A mild etching product is frequently also employed to facilitate stain penetration. For sealers, RestoraCrete goes with a proprietary nanoacrylic formula or, on garages, driveways or other abrasion-prone surfaces, with an acrylic-urethane version.

Peter Natale, president of Concrete by Design, Fairfield, N.J., is sold on the use of a colored product that's penetrating, solvent-borne, siloxane-based and water-repellent to restore the appearance of concrete surfaces of various types.

Natale also says he will sometimes use a reduced amount of the color component of his two-part color-restoration product to make the color more transparent. "You've got to know how to cut the sealer and colors," he says.

Brown, of KB Concrete Staining, says a varied palette of stain colors and products give him a range of choices for different surfaces and elements, in solid and translucent shades. He also varies color

strength depending on the effect he's looking to achieve on patterned surfaces or water features such as slides, waterfalls and grottos. He'll follow application of a solid-color stain with the translucent color to render an antique effect.

Not infrequently, Brown says he finds himself correcting original integral coloring that went off course as a result of treatment with a retarder that etches the surface for a sandblasted look.

"Out here (in California), the sandblast look is popular, but when integral color is involved, it's rare that the colors come out uniform from one section of the pour to the next. Staining has the advantage of fixing that."

Dave Pritchard, owner of Pritchard Concrete Inc., in Golden, Colo., follows a similar approach in stripping off sealers and prepping the surface in restoration work, But he's also partial to a stain system targeted at the restoration market — a water-based, polymer-modified solid-color product that is often used in conjunction with a translucent stain based on the same chemistry. Again, antiquing is the objective.

The stain products are formulated to rejuvenate by minimizing discolorations without altering texture, according to manufacturer literature.

Materials Made for Color Restoration

Just about any coloring material or tool can potentially be useful on a restoration job. However, some manufacturers have targeted this growing niche with specially marketed materials. Here are a few of those products, with some descriptions from their suppliers.

CSI ReStore Concrete Stain from ChemSystems Inc.: A polymer-modified, water-based that penetrates the concrete surface and forms an opaque, breathable finish, with no sealer required. ReStore Translucent Stain is used over solid-color stain in a contrasting color to produce an antiquing effect. The products can be used to rejuvenate colored or uncolored concrete surfaces by addressing discoloration while not altering surface texture.

EZ-Tique Water-Based Antiquing Wash from Proline Concrete Tools Inc.: A water-based acrylic coloring agent applied as a wash coat to add an antique color to a newly textured surface. According to its marketing materials, the wash "can be used to revitalize a weathered concrete surface or add an antique color to a freshly textured surface."

Scofield Revive Color Refresher from L. M. Scofield Co.: A penetrating, solvent-borne, siloxane-based colored water repellent for improving the color uniformity and intensity of porous exterior colored concrete surfaces and pavers. It can also add a measure of color to uncolored concrete.

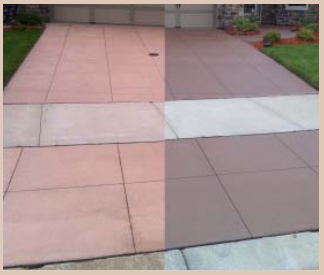


Photo courtesy of L. M. Scofield Co.

Solid Color Stain from NewLook International: The polymer-modified formula is designed to penetrate the surface of porous concrete and produce an opaque but breathable finish that does not require a sealer. Its marketing materials state that it is "used to restore previously colored surfaces or to rejuvenate old, tired-looking concrete by completely covering discolorations or stains." Other NewLook products, such as Translucent Color Enhancer and TiqueWash, are also linked with restoration work.

Photo courtesy of Kevin Brown, KB Concrete Staining

This residential project in Rancho Cucamonga, Calif., included a complete restoration of the rock pool and spa. Kevin Brown of KB Concrete Staining, Mira Loma, Calif., used NewLook materials for the renovation, including the company's SmartColor stain in Milk Chocolate, White, Black and a tan shade.

Support during the slump

Natale, of Concrete by Design, says the company's restoration business has grown in importance in the wake of the Great Recession and a lingering chill in construction. "In the last five years, it's been a major part of our work," he says. "It's people looking to make what they have better without a total redo. Up here in the Northeast, costs can be so high."

His diversified restoration portfolio includes pools, patios, driveways, walkways, floors and hardscapes. A key to making a success of this niche, he says, is to not oversell it. "If the original was poorly done, you can't totally fix it. If it was done decently, you can make it look better. A poorly done (original) job may have to be torn out."

Rick Ogden, Rick Ogden Construction, Pryor, Okla., says a combination of sun, deicing chemicals and lawn-fertilizer residue takes a toll on his customers' original decorative concrete color, especially in cases where regular maintenance is lacking.

In some cases, an existing sealer over color that has faded moderately can be re-emulsified with a strong solvent to remedy the appearance. Application of a new sealer follows.

"If it's too far gone you have to strip it and restore it — recolor it or whatever the customer wants to do," Ogden says. "It's usually a function of what it costs."

Ogden says his choices of materials veer toward soy-gel strippers for coating and sealer removal, plus acetone-based dyes for color. Another product — a water-based, high-strength proprietary acrylic stain — gets a solid endorsement for its performance, but must be used differently from other stains. "You can't rush it," he says, as it requires 24 to 36 hours to bond completely.

Ogden says he continues to see growth in decorative concrete, but also plenty of failures due to practitioners who rush or don't do things right, necessitating a fix. Other restoration jobs are the result of DIY projects that go amiss due to a sealer that wasn't removed or some other application or preparation snafu. Like other restoration pros, Ogden preaches the "educate the customer" mantra. "You have to have good communication with the customer. They've had a failure, and you have to be honest with them as to what you can do and can't do."

The policy of honesty covers the cost reality, he says. "Restoration is expensive," he says. "(But) when there's a bad job and I come in and make it good, then I'm a hero.

Photos courtesy of JLC Concrete, NewLook International Inc.

Mike Webb of JLC Concrete, Wilton, Calif., brought this pool deck back to its original luster using NewLook International's Original Solid Color Stain in Sierra.

They spent a lot of money (originally) and are disappointed. I find more and more, particularly in the decorative concrete business, people who invest in it and want to get it back to as good as it was are willing to spend the money."

Pritchard says restoration work increased in importance for his company during the construction chill that struck in 2009. (Construction is now coming on strong, he notes.)

A good deal of his business emerged two to three years ago in the restoration of basements of older homes. The standard process was grinding the surface, applying a microtopping and then applying a stain.

At Winsol Groundworks, of Sacramento, Calif., the restoration-focused business division called "Tint and Seal" is one of the landscape and hardscape company's most profitable operations, says Nicholas Winn, chief operating officer.

"It's a growing market. Just getting the message out is the hardest part," he says. "These people are so frustrated because they spent tens of thousands of dollars on stamped and colored concrete, and didn't get the result they hoped for."

The problems are often evident just two to five years after installation, but he's seen them within just a year's time. Part of the blame can be traced to ultra-low VOC-content requirements for sealers in California, he says. "That's why we do a scope of work with clients ahead of time, and discuss expectations and color, making sure the client knows what the color will be. We do a free sample and build it into the cost of the project. It's so crucial, because things can go south on you if they are not happy with the color."

Winn says that until about a year ago, lingering economic weakness continued to put a squeeze on client budgets, and they pressed for premium services at discount prices. "We are seeing that turn around, but it's still a struggle," he says.

Like other restoration contractors, Winsol Groundworks tends to stay with a system of color-restoration materials from a single manufacturer, although the company is also sold on a second supplier's iron oxide-colored line of water- and solvent-based translucent stains that are designed to produce the much-coveted antiquing effect.

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Perfect Fixes for Polished Floors

Quality repair will ensure joints, holes and cracks don't compromise your work

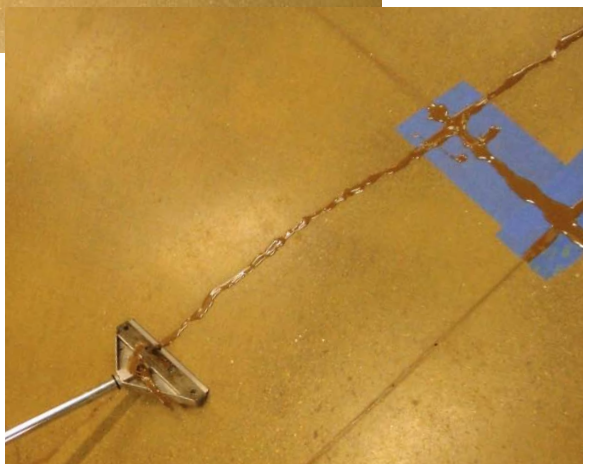
by Wade Christensen

A concrete floor polished up to 3,000 grit, stained, guarded and burnished can be a sight of sheer beauty. For many customers, a polished concrete floor is the perfect fit. The only problem is, many concrete floors are far from perfect slabs. There are pinholes, cracks, pop-outs, gouges, and spalling joints, just to name a few flaws.

Defects not only detract from the aesthetics of the floor, but can also compromise a facility's functionality. They create problems such as trip hazards or can act as bacteria collection points in locations with sanitation concerns, such as hospitals and food processing plants.

When it comes to high-end floors, these types of imperfections are simply unacceptable. Fortunately our industry has progressed to the point where it seems every disfigurement can be addressed.

Photos courtesy of Niagara Machine



A repair in progress. After cracks are cleaned, they are slightly overfilled using a polyurea joint filler. Excess is removed. Notice how well the joint filler matches the concrete floor.

Small hole and defect repairs

When it comes to everyday holes and small cracks (those less than 1/8 inch wide) your best bet is to use a polyurethane/polyurea polymer.

The process for addressing a chip in the concrete surface is relatively easy. Begin by removing all debris from the defect, and leave it in its structural concrete form. Next, slightly overfill the problem area using your selected polymer. If the floor repair is being done in conjunction with grinding and polishing, the repair material should be applied after the initial coarse grind.

The product must then be given time to harden. Depending on the polymer used, the wait time will vary. Metzger/McGuire's Rapid Refloor sets up in about 25 minutes.

Then the overfill material can be removed. If the polymer is used during the course of grinding, simply move on to your next grit.

It is important to note that stronger polymers require aggressive tooling of 100 grit or more. If the repair is not done in conjunction with grinding, the excess can be removed using a cup-wheel grinder and a medium-grit pad. Using this process the floor could be ready for traffic again in as little as 30 minutes. Repair of minor defects is simple and can turn a potential safety hazard or unsightly blemish into something barely noticeable.

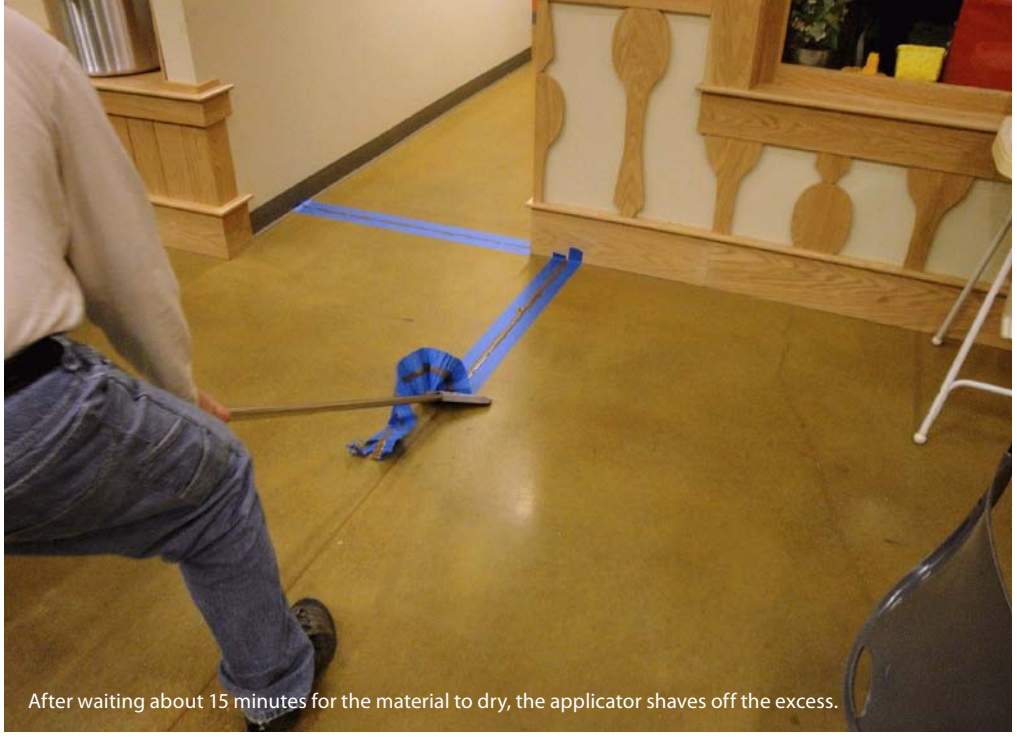
Joint separation

We have all seen it before — previously filled joints that have opened up and left tears or voids in the installed joint filler. The simple fact of the matter is that concrete shrinks. A typical concrete slaib contains more water than is needed to activate the cement. Over time the moisture begins to exit the slab via evaporation, reducing the overall size of the concrete slab. The typical rate of shrinkage in a 6-inch slab is 1/8 inch per every 20 feet. This means that if you have 15-foot panels, each 1/8-inch saw-cut joint will eventually open to almost 1/4 inch, an expansion of nearly 100 percent.

This leads to a common question: If separation is going to occur, when do I need to be concerned? Charles Serrano,

Florida sales representative of Niagara Machine Inc., explains that 1/32 inch, or approximately the width of a credit card, is the magic number. "Hairline voids are bound to occur, but will rarely be cause for concern. What is important is separation between the filler and slab. The main concerns here are if the separation will cause joint edge deterioration over time (especially with seasonal changes affecting the level of separation) or if sanitation is a concern." If either of these are issues, then the joint should be addressed.

There are two main options for repairing filler separation. The first is cleaning out the separation voids by removing loose debris mechanically or with compressed air and then refilling with a fast-setting semirigid polyurea or slower-setting epoxy joint filler. The second option is to cut out or "mill out" the top 1/2 inch of filler using a saw, then utilizing an epoxy or polyurea polymer to refill. Each of these methods has its own pros and cons, but both will get the job done.



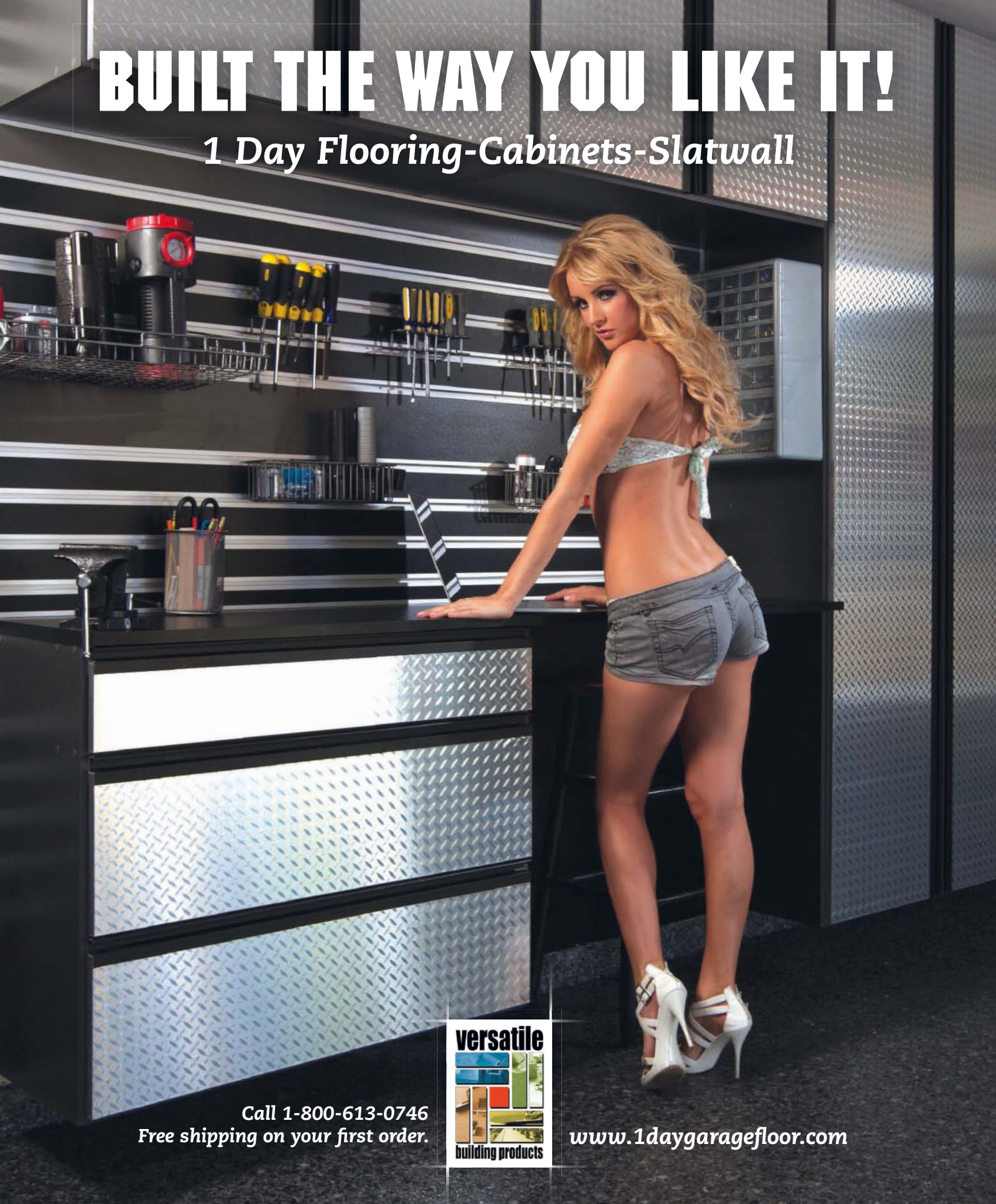
After waiting about 15 minutes for the material to dry, the applicator shaves off the excess.

Color-matched joint filler

Nothing can put a bigger damper on a beautifully polished or colored concrete floor than having a mismatched joint filler color. As options for concrete colorants have become nearly limitless, the ability to match joint and repair material to the substrate has followed.

Metzger/McGuire has color options in many of its product lines that are designed to match the colors of industry leaders in stains and dyes such as L. M. Scofield Co. and Prosoco Inc.

Wade Christensen is vice president and marketing manager of Niagara Machine Inc., a distributor of industrial surface preparation equipment. Contact him at (800) 622-2048 or wade@niagaramachine.com.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Get the Rock Look With Epoxy-Bonded Stone Systems

by Stacey Enesey Klemenc

If you're looking to expand your repertoire beyond stamping, staining and coloring concrete, there is a host of surfacing alternatives — some old, some new — just waiting to be explored. One that first became popular in North America in the 1970s, and is still used throughout the world today, is epoxy-bonded stone, a system that typically combines a company's proprietary epoxy with river rock.

"This is a topping and a viable decorative alternative," emphasizes Drew Fagley, president of HoverTrowel Inc., a company that makes lightweight power trowels designed to help finish many of today's polymer toppings.

Some might know river rock by another name — Chattahoochee stone. "River rock was originally called Chattahoochee stone because it was mined from the Chattahoochee River," says Buster Osteen, product specialist and technical director for McKinnon Materials, a Florida-based company that makes and distributes River Rock flooring. He previously had worked for a sister company, which had its beginnings in the early 1960s, that mined and bagged its own rock.

Because of changes in environmental protection laws over the years, Osteen explains, "Rocks once mined in a river are now acquired through pit mining operations where river beds used to be." There are about a dozen such mines across the country today, he adds, that supply the specially washed and dried rock for the epoxy-bonded toppings.

"You need to use river rock that's been specially prepared," Osteen points out. "If the stone contains too much moisture it can cause the epoxy to white out."

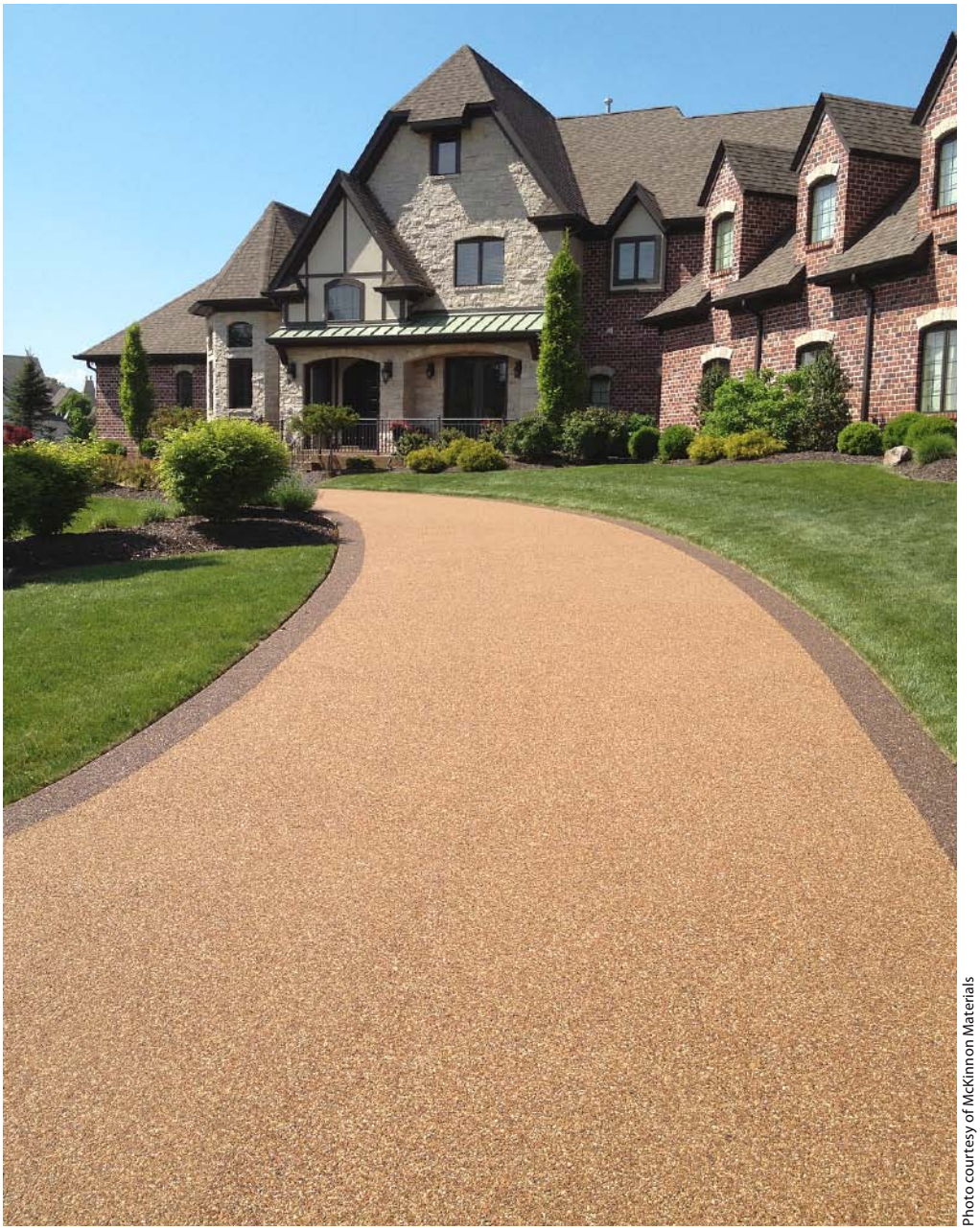


Photo courtesy of McKinnon Materials

St. Louis Resurfacing created this residential driveway using McKinnon Materials' River Rock. The border is McKinnon's Multicolored Flint color and the inner field is Apache.

A closer look at the systems

Epoxy-bonded stone mixtures can be applied at thicknesses from 1/4 inch on an interior floor up to 2 inches on a driveway, depending on stone size and intended use. "The 3/16-inch diameter stones form a smoother surface because the fines in the mixture help to fill some of the gaps. There are slightly bigger gaps between the 5/16-inch stones," Osteen says.

Many manufacturers recommend sealing with epoxy if a sealer is desired. The surface is typically ready to walk on in 24 hours.

"These open-stone toppings had gotten a bad rap years ago being installed north of the Mason-Dixon Line because of freeze-thaw issues," Fagley says. But improved epoxy formulations available today and contractor awareness has this type of topping making a comeback for both interior and exterior applications, he adds.

Uses and installation

Containing less epoxy than seamless toppings such as epoxy quartz and terrazzo,

the epoxy-bonded stone mix is generally porous. “The size and spherical shape of the stones do not allow the mix to knit together and form a seamless topping,” Fagley says. Consequently, there’s no puddling on the surface from spills or splashed water, making the system ideal for pool decks and areas around fountains.

Photo courtesy of Stonecarpet

Stonecarpet provided materials and labor for this Blackhawks logo at a store in Chicago’s United Center.

Photo courtesy of O.C.R. Products Inc.

Before its new coat of epoxy-bonded stone, this garage floor was pitted, cracked and stained. Ohio Concrete Resurfacing, based in Bedford, Ohio, applied NatureStone to make it look new again.

Other areas for potential use are retail stores, hotels, casinos, offices, showrooms, municipal buildings and other public areas. In the residential arena, open stone systems are often installed in garages, basements, rec rooms, laundry rooms, sunrooms and patios. They aren't appropriate for medical facilities or restaurants because of the loose-knit surface.

Comparable in price per square foot to ceramic tile installed, epoxy-bonded stone could cost more or less depending on the thickness of the coating, the substrate and the prep work needed. It's most commonly installed over a concrete substrate, but depending on the manufacturer's recommendations it could top many surfaces, including tile, steel, asphalt, wood, fiberglass or even crushed stone.

Osteen says if a concrete surface is dirty, it must be pressure-washed before the epoxy-bonded stone mixture is troweled on. If algae are present, he recommends drenching the concrete with pool chlorine prior to pressure-washing. Although some manufacturers recommend scarifying the concrete prior to applying the topping, Osteen maintains grinding isn't usually necessary with McKinnon's system.

"If water soaks into the concrete you won't have problems with the epoxy adhering to it," he says. "If water beads up then you have to grind the surface so the concrete can absorb moisture. If you don't, the epoxy won't stick."

Most companies offer standard colors of small rounded pebbles in 50-pound bags, with custom blends available on request. For variety, some companies include small angular rocks in a mix to enhance its colors. Others offer larger-sized pebble mixes.

To prepare for installation, the stones are blended in small batches with a company's specially formulated epoxy. The mixture then can be screeded onto the floor or troweled by hand or with a lightweight power trowel.

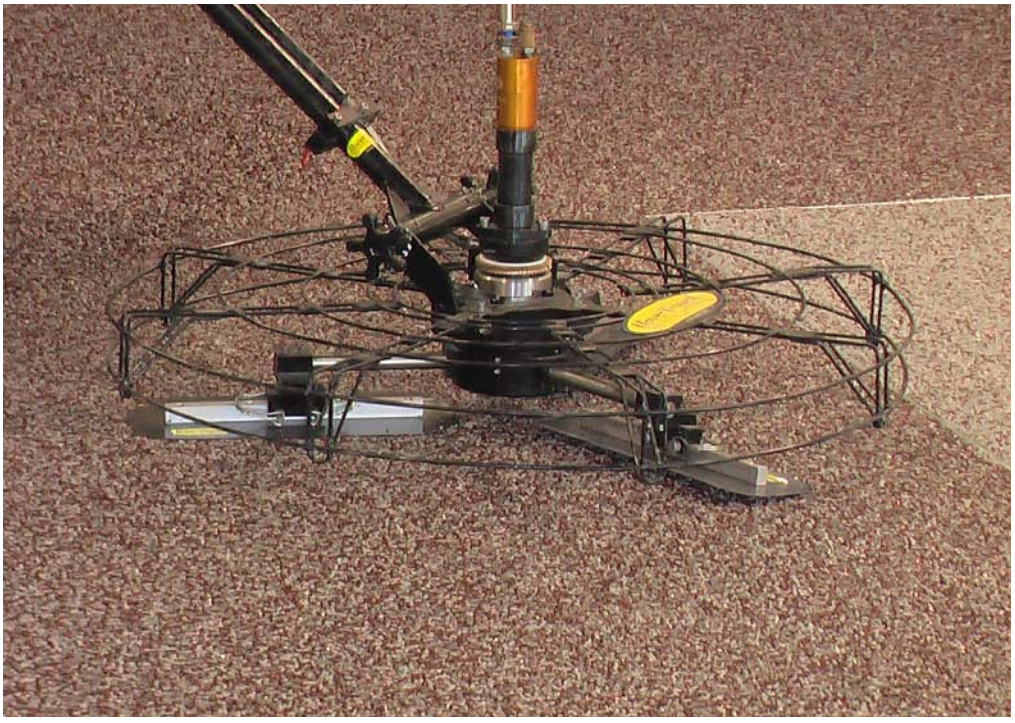


Photo courtesy of HoverTrowel

Stonecarpet materials and a HoverTrowel on a job by Carl Sanderson, Quality Design and Construction, Oaks, Pa.

Osteen recommends raking out the mixture with a gauge rake, then troweling the surface in all directions of the compass. "If you only trowel east to west you'll leave gaps and open spots in the surface. Because of the way the stones are shaped, they won't bond with the stones above and below them," he says. For a nice, tight deck, he continues, keep 18-20 pounds of pressure on the trowel and keep it as flat as possible.

Logos or other designs made from stones of selected colors or sizes can be incorporated into the finished area. Most epoxy-bonded stone systems come with a warranty.

There are several companies that manufacture, distribute or install these systems throughout the country. Many have their own special niche and dealership or franchise opportunities that may appeal to decorative concrete contractors who also deal with epoxies.

Feels like carpet

Michael Sexton, vice president of sales for Stonecarpet, a company founded by his father 20 years ago in Des Plaines, Ill., says people who have experience with troweling can pick up this system with no problem at all. In fact, he adds, an experienced crew can install 8,000 square feet a day, making it ideal for renovation projects and commercial applications.

"Our product looks like carpet. That's how it got its name," he says about the Stonecarpet topping, made from 3-4 mm-sized quartz stones. "But it feels like you're walking on a rubber floor. The floor gives a little under your feet. It's a comfortable 'soft' walk."

Sexton says his product can be seen in about 25 Harley Davidson showrooms as well as an assortment of auto dealerships. Churches and Stonecarpet are also a good mix because of the product's acoustical value.

As for maintenance, Sexton recommends using a shop vac in high-traffic areas and getting the floor steam-cleaned once a year. "You don't need to mop or sweep," he says.

Because of the thickness of the epoxy and stone mix, it isn't necessary to topcoat the Stonecarpet after the initial installation.

"But three to five years down the road, we recommend the floor be sealed to protect the system on a long-term basis."

Bringing it home

Michael Masetta, vice president of Ohio Concrete Resurfacing and O.C.R. Products, the maker of Nature Stone flooring, says the engine that drives the family business in Bedford, Ohio, is the residential market.

Back in 1989, his father, Russell Masetta, a concrete contractor, concocted a specially blended epoxy and mixed it with river stone to transform an ordinary concrete patio into an eye-catching backyard asset. By 1992, he had dropped all other lines of resurfacing products, coined the name Nature Stone and just installed that brand, Masetta says. And the flooring has been going like gangbusters ever since.

"He brought (the epoxy-bonded stone system) to Ohio. Before that, it had been a Sunbelt product used around pools. My father built it out and made it his own," Masetta says. He eventually brought the product into garages and basements so he would have work year-round in the colder clime.

Bringing it indoors led to the discovery of more of Nature Stone's redeeming qualities. "Our in-house chemist and technical director tells us the R-value is two times better than carpet and 10 times that of tile," Masetta says. "And the porosity allows concrete to breathe so mold and mildew don't form."

As for acoustics, he adds, "We have put Nature Stone in gun ranges and the sound does not bounce all over the place."

Outdoor man

In Jason Haywood's neck of the woods in Virginia Beach, Va., the epoxy-bonded stone system is more widely requested outside rather than inside. As the owner of Sierra Stone Hampton Roads, Haywood has been installing the epoxy-bonded stone system for four years. His background is in general construction.

"I'd say 99 percent of my work is exterior, with the top two areas pool decks and driveways," he says. Patios are a close third.

"Most of my jobs involve putting Sierra Stone on existing concrete that needs some help," Haywood says. "It's a better alternative to tearing out the concrete and starting over."

Maintenance of Sierra Stone involves an annual pressure-washing. Haywood also recommends a reroll of epoxy every two years or so.

Antiskid and aesthetics

Tim Hickey, president of CFC-Concrete Floor Coatings Inc. in Laguna Hills, Calif.,

FAST fact

The epoxy-bonded stone system is also known in the United Kingdom as resin-bonded or resin-bound systems. Over there, resin-bonded involves scattering loose stone onto a coating of resin, while resin-bound refers to aggregate and resin blended together prior to application.

Photo courtesy of O.C.R. Products Inc.

This basement had flooded, and mold and mildew set in quickly. The homeowner was looking for a flooring material that would not need to be replaced if future flooding occurred, so Ohio Concrete Resurfacing applied NatureStone from O.C.R. Products Inc. The contractor and materials supplier are jointly owned and operated.

has been installing the Pebble Bond Epoxy System from Life Paint for almost eight years. He offers the service alongside other epoxy systems and concrete polishing.

Hickey says he's had few requests to install Pebble Bond Epoxy indoors. Most of his jobs involve pool decks, driveways and patios for investment homes because of the product's reasonable price and quick turnaround.

One of its many advantages is slip resistance, he says. "You can broadcast dry silica sand over the installed pebbles to get an antiskid finish."

Still, Hickey says it's "more of an artistic coating" — it's a quick fix you can use over unsightly concrete and it looks good. "I like it because it's so porous it allows water to drip down into it so you don't have puddling. And it covers up unsightly concrete. Basically, it's a quick fix and it's easy to put down."

- **www.hovertrowel.com**
- **www.lifedeck.biz/PDFs/SpecSheets/PebbleBond.pdf**
- **www.mckinnonmaterials.com**
- **www.naturestone.com**
- **www.sierrastone.ca**
- **www.stonecarpet.com**

Choosing the Best Mixer for Your Countertop Concrete

By Steven Miller

Choosing the right mixer for casting countertops, sinks and the like is an important element of getting the results you want. The mixer must deliver a workable and consistent mix, in the quantity you need, at a speed that allows you to work profitably.

We talked to four experts about the issues and the choices, and found general agreement about the big questions but some interesting differences in the details. They all began by saying that the mixer you need depends on the type of concrete you're casting. Mixers that work excellently with one type of material may not deliver a workable result with another.

Jeffrey Girard, P.E., president and founder of The Concrete Countertop Institute, was emphatic that using the right mixer for the job is integral to getting good results. "A lot of the problems that people have in this field occur because they cheap out, do it the wrong way and then have callbacks. That is what kills your profitability. There cannot be any compromises in the process." And if the price of the equipment seems high, he points out that "buying a brand new mixer is dirt-cheap compared to setting up most businesses."

Working with wet-cast

For a conventional sand-and-gravel mix — sometimes referred to as a wet-cast mix — a drum-style mixer is considered the best choice. It's also one of the most economical, and very easy to find. A drum mixer consists of a rotating drum or barrel with blades fixed to the inside, basically a personal-sized version of the familiar ready-mix truck.

"Barrel mixers rely on the material folding through itself to mix properly," explains Mark Celebuski, partner at Trinic LLC.

Mike Heidebrink, co-president of Cheng Concrete, notes that a barrel mixer operates with the drum tipped on its side, so the concrete is falling in on itself. "The aggregate needs to be kept in suspension, and that's what drum mixing does," he says. Not only does the drum mixer prevent the coarse aggregate from collecting at the bottom, it also requires coarse aggregate to enhance mixing action. The rocks act as little mixing blades, helping blend the sand, water and cement.

Photos courtesy of The Concrete Countertop Institute

The GFRC Mini Mixer from RimCraft Technologies Inc. is a small, high-shear mixer with two speeds and a claimed 150-pound batch capacity.

Girard agrees that a barrel mixer can work well for wet-cast — if you load the mixer properly. "Add liquid up front, cement last. The wrong way is to put all dry ingredients in, dry-blend them, then add water. It will form stiff clumps and never mix properly."

He recommends first mixing the water and all dry materials except the cement, and blending very uniformly. You can take as much time as you need, because the clock doesn't start ticking until the cement is introduced. Then, he says, "add cement gradually, so it mixes easily and efficiently without hassles or problems."

Our fourth expert, Jeremy French of Blue Concrete, not only agreed, but felt drum mixers are "especially good" for wet-cast.

Drum mixers come in a wide range of sizes. It's important to remember that the size rating refers to the total capacity of the barrel, and you would never actually try to mix that much at once. (This is true of all mixer types.) Girard suggests mixing about a third of the rated capacity. Celebuski

A vertical-shaft mixer working on a fluid, aggregate-based concrete mix.

A drill mixer being used to make a small batch of glass fiber-reinforced concrete in a 5-gallon bucket.

recommends mixing half the rated capacity or less. "For a 10-cubic-foot rating, mix 3-5 cubic feet." He also cautions not to try to mix too little in a barrel mixer, because the material will roll around without folding.

Heidebrink suggests that the ratio depends on the size of the mixer. With a 5-cubic-feet mixer, mix 2-2.5 cubic feet. With a 9-cubic-feet mixer, up to 6 cubic feet. With a 12 cubic-feet mixer, you can mix 8-9 cubic feet.

Succeeding with sand

Sand mixes don't work as well in a drum-type mixer because they lack the coarse aggregate to help the dispersing action. Since a sand mix is basically similar to mortar (cement, sand and water) it stands to reason that a mortar mixer might be a good choice, and our experts concurred on that.

A mortar mixer is usually a horizontal trough, with a horizontal shaft bearing mixing blades that turns inside it. The blades or paddles constantly sweep the mix up out of the bottom of the trough and fold it over itself. They typically have a rated capacity of about 7 cubic feet and are usually tow-behind devices. They're often seen at the job sites of masonry or stucco projects.

Girard says that a mortar mixer is also useful for wet-cast mixes. "For people who want to do both kinds of mixes, my only recommendation is a mortar mixer. And I recommend an electric mixer. They're a tiny bit more expensive, but they have no fumes." Heidebrink felt the opposite, that mortar mixers "are not good for large-aggregate mixes."

GFRC's special needs

Everyone agreed that glass-fiber reinforced concrete (GFRC) (and its near-cousins using other fibers) is a very different material that requires high shear in mixing to produce a consistent and workable result.

Girard explains that GFRC materials were designed to meet the needs of large-scale precast plants. The ideal mixers for them are "very large, very impressive, very expensive" high-shear mixers.

"Conservatively speaking, 90 percent of concrete countertop people can't afford them. Instead, they use a drill, or a handheld mixer, that spins a 5- or 6-inch diameter blade at about 500-800 rpm. They're marketed for mixing paint or thin-set. These work."

This type of mixer is typically used in a 5-gallon bucket. It may have one or two blades. Heidebrink feels two is better.

The drill-and-bucket method can be arranged on a production basis, Celebuski points out. You just need a lot of buckets. He measures all the dry materials except the fiber into all of the buckets, and pre-measures the water and fiber for each bucket. "Then one guy starts mixing and the other guy pours."

However, Girard points out that there are, "big downsides" to the hand-held option. "You can only make a small amount of concrete at once. The most I've been able to make efficiently is about 80 pounds at a time. (And) it is killer on the person mixing. It's very fatiguing. At the end of the day, your back is done. From an efficiency standpoint, that's a downside."

French concurs. "It's what many guys use for GFRC, and it's an absolute time drain. Your motto should be, 'What equipment can I get to reduce the labor?" Because labor is almost the entire cost in making countertops."

If your shop produces enough volume to support it, a stand-alone high-shear mixer seems well worth the investment. Described as being like an oversized milkshake machine, a high-shear mixer runs at very high speed and produces a very consistent,

A large, towable concrete drum mixer with a poly drum.

well-mixed batch very quickly.

"If you're running a GFRC pump rig," suggests French, "this is the mixer you need to use. It mixes in the fiber better than any other type. In order for the mix to go through a pump, the glass needs to be mixed well. If you leave it in there too long, however, it will shred the glass fiber."

If you don't want to mix in buckets, and you can't afford a high-shear machine that costs $12,000 to $20,000, is there an alternative?

Surprisingly, everyone agreed that a vertical-shaft or pan mixer was a great choice for GFRC. Several mentioned the Imer Mortarman 360 specifically in terms of performance and size. Although it does not produce as fast as a big, high-shear mixer, the result with this type of mixer is deemed more than adequate by our entire panel. One typically costs about $5,000 to $6,000.

French says the 360 was a "revolutionary experience for me. We put in 300 pounds dry weight — 345 with water — and don't think twice about it."

Girard also mentioned a specialized GFRC mixer made by RimCraft Technologies Inc. This product, the GFRC Mini Mixer, cannot be found on the company's website, but it is a high-shear mixer with two speeds and a claimed 150-pound batch capacity.

CONCRETE QUESTIONS

Why Is My Integrally Colored Concrete the Wrong Color?

By Chris Sullivan

Question: We just had a large stamped concrete patio completed, and we chose a light buff integral color with dark tan release powder. The resulting color of the concrete surface looks entirely different from the color we chose — it's more like an antique rose color. Is it possible that the concrete supplier got three truckloads mixed incorrectly, or is something else going on here?

Photo courtesy of Jim Jacnel

Excess water from a wet broom created this light-colored area on an integrally colored broom-finished pool deck.

Could the batch plant have sent three loads with the wrong color? Yes, but this is pretty rare. In my 20 years of dealing with colored ready-mix I have found very few times where the batch plant made a mistake and batched the wrong color, and even fewer instances where three different loads had been batched incorrectly. That being said, ask to see the batch ticket from the ready-mix supplier just to be sure. It should show the details on what and how much color was loaded.

Whenever dealing with integrally colored concrete that has color issues, I try to determine if the problem is a surface issue or a base color issue. Surface issues are just that, color problems that occur only on the surface. The most common of these are efflorescence, surface color fade due to finishing, and color interference. In contrast, a base color issue is where the actual color is wrong throughout the entire depth of the concrete.

The best way to determine if the issue is a surface problem or a base color issue is to look inside the concrete. This can be easier said than done, but there are some tricks. If the concrete was recently placed, look for a few scraps of concrete and break them open. If the concrete has been down for a while, a small cut or scratch may need to be made in an inconspicuous place. The last and most invasive method involves coring the concrete, which I have only seen done a few times on large commercial jobs where serious litigation was pending and test results were critical.

As to the inside of the concrete, the color of the concrete should be uniform throughout and should match the surface. If the internal color of the concrete is correct and the surface is wrong, that usually eliminates the possibility of a pigment or coloring issue and indicates a surface color issue. A vast majority of integrally colored concrete color issues end up being surface issues.

When placing concrete with integral color, there a few things I always recommend.

Color loading above 2 percent: As a rule of thumb, color loadings below 2 pounds of color per sack are more prone to color variations. The lower the color loading or dosage, the more impact the gray concrete will have on the final color appearance.

It cannot be overlooked that plain concrete has an inherent color — gray. This gray concrete color plays a part in what the final color will be, even when pigments are added. I have often used the analogy of adding milk to a cup of coffee to describe this concept. The milk is the pigment and the coffee is the concrete. By adding the milk we change the color of the coffee from black to tan, but we never change the color completely to white. The same holds true with pigments used to color concrete. They can change the color of the concrete, but the gray color of the concrete will always impart a color.

The less pigment is used, the more gray shows through. This is why I always promote using color loadings above 2 pounds per sack. The higher pigment loading is more forgiving and tends to hide

variations that can be inherent to gray concrete.

Thoughtful color selection: Tinting strength is the measure of how well the color pigment will show when added to another material. In our case it has to do with how the color will perform when the pigment is added to gray concrete. The most popular pigments used to color concrete are iron oxide-based. They are the most economical, do not fade, and have excellent resistance to the high-alkaline environment found in cement-based materials. In general, red iron oxides have the highest tinting strength, followed by blacks, with yellows being the weakest. This explains why integrally colored concrete colored with a 2-pound load of red pigment produces a much more vibrant-looking concrete piece than the same concrete colored with a 2-pound load of yellow or buff pigment.

Keep in mind that most pigments used to color concrete are blends of two or three colors (red, yellow and black), and depending on the ratio of pigments in a blend, the final color can be affected if there is a placement or finishing issue. In this particular case, the color was supposed to be light buff and turned out a rose shade of pink. Most buff colors are a blend of yellow with a small amount of red and black. I have found that if the concrete is placed wet (slump above 6 inches), or excess water is used on the surface when finishing, the red color, because of its high tinting strength, can become predominant and result in the final color having a pink undertone as the yellow and black become washed out.

No excess water: Stay away from adding water to the mix once the concrete has been placed. As I mentioned previously, excess water can lead to pink undertones or more often tends to lighten the color overall. Any excess water applied to the surface during finishing will increase the water-to-cement ratio in the surface paste, leading to washed-out or inconsistent color. This excess water can also lead to efflorescence, which is one of the most common problems affecting surface color.

Samples and mock-ups: I always recommend a sample or mock-up be performed using the ready-mix concrete that will be placed on the job. Manufacturers' color sample chips are a great way to get started, but cement color varies so much from region to region. There can be substantial color differences between the concrete used to produce the samples and the concrete used on the job. In addition, everyone finishes concrete differently, and different colors of release powder and sealers can have widely varying effects on the final color.

Once you have determined the cause of the color problem, the proper method for repair can be prescribed. These can range from topical stains to color washes to tinted sealers. In some cases, if it turns out the base color was incorrect, the concrete may have to be replaced.

Chris Sullivan is vice president of sales and marketing with ChemSystems Inc. He has led seminars and product demonstrations throughout North America. Reach him at questions@concretedecor.net.

Installation Tips for Polishable Overlays

by Joe Zingale

Photos courtesy of CTS Cement Manufacturing

The Nordstrom Rack clothing store in Aventura, Fla., contains 7,000 square feet of polished overlay, including this aisle. The project is the work of Creative Concrete Services, Lakeland, Fla.

Existing concrete slabs often have imperfections — VCT tile lines, various patching materials from carpet tack strips, trenching, framing braces. This so-called character may be OK with some customers, but not the customer who wants uniformity. Many customers are wanting polished concrete without all the flaws showing up in the finished floor.

That's only one reason polished concrete toppings are becoming very popular as a finished floor system for both damaged floors and new construction. The benefits have been proven in environments such as schools, big box retail, grocery and retail chains, government facilities, restaurant chains and residences.

In terms of decorative options, existing concrete slabs are limited to topical color systems. In many cases these coloration processes are subject to fading and wear and are sensitive in high-moisture environments. You'll find more versatility in 3/8-inch concrete overlays. Not only do you have a choice of UV-stable integral colors, but you can also choose from several types of aggregates. Many of our contractors (CTS Cement Manufacturing's customers) have used this color-and-aggregate combination to replace damaged areas in existing stores to match the adjacent flooring, while some of our experienced contractor-customers create unique multicolored designer floors and floors that resemble terrazzo.

Today, more and more contractors are jumping into this type of flooring. However, placing and polishing a concrete overlay requires a great deal of attention and more coordination than polishing an existing slab.

Here are a few tips when taking on an overlay-polishing job:

Examination of the existing slab: The substrate should be free of any contaminants. The existing substrate should have proper hardness and soundness. If repairs have to be made prior to primer application, knowing the moisture level in the slab is essential for determining the appropriate repair products that will fit the time schedule of the project.

Priming: We have found with these highly decorative floors that a high-solids epoxy primer with broadcast sand provides the best results over the profiled substrate. Acrylic primers are thin-mil primers that don't offer any crack-bridging capabilities and usually can't stop any of the pinholing that is associated with an outgassing substrate and affects the finished surface.

Mixing and placing the overlay: You should consider having someone placing polished overlays who is trained or has experience. A polished overlay requires a great deal more attention than an overlay that is not going to receive a polished finish.

The mixers, tools for placement, and process of placing a self-leveling overlayment for polishing are much more refined today than in the past. Many contractors that used to mix in the two-bag barrels are now turning towards batch mixers that mix the material more efficiently, such as the five-bag Hippo mixer from CS Unitec.

What's more, in the past the smoother trowel was the choice tool for finishing these overlayments. Today, the thin metal spike roller is what contractors prefer to use for their finishing. Not only is the metal spike roller very easy to use, but an overlay finished with it generally requires less grinding than a smoother-troweled floor.

An organized mixing station is the backbone to the entire process. Having the right manpower, correct mixing time, proper mixing equipment and proper placement tools over a properly primed slab is critical for the finished polished surface. In the past, overlays were rarely ground with metals — at most, they'd get a light sand prior to sealing. But after you remove the top cap of overlay during the grinding process, any unmixed material, air in the mix, pinholes (due to lack of primer) or sand

segregation will be visible imperfections in the finish surface.

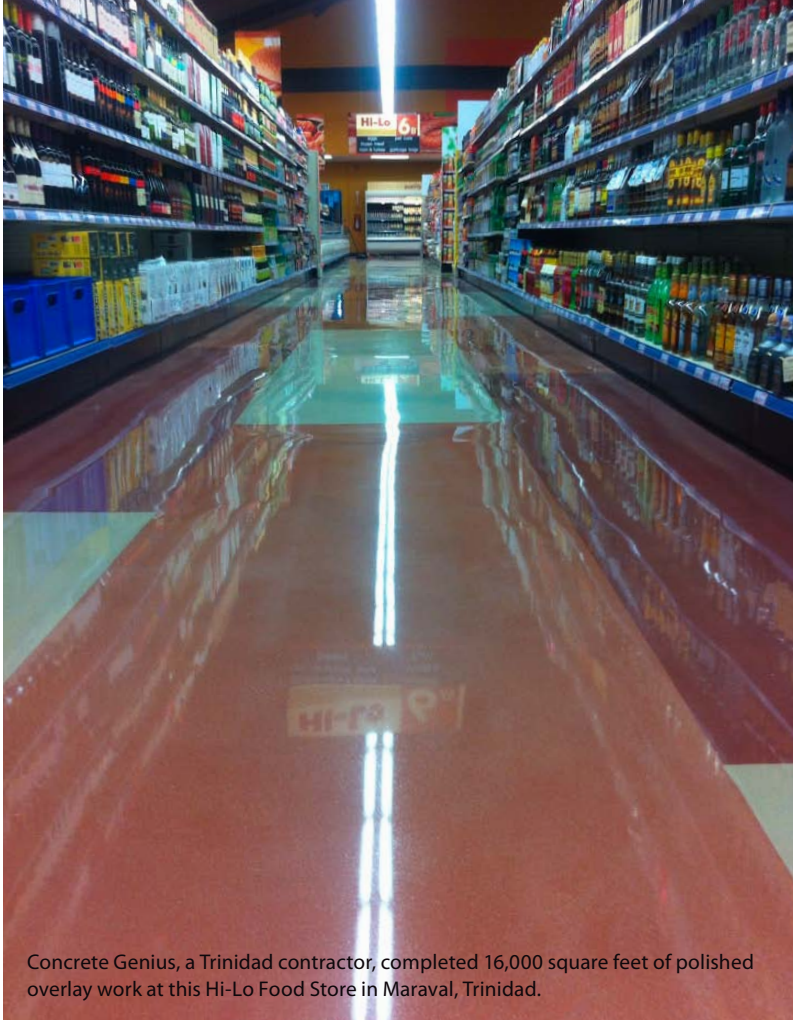
Placing an overlay with aggregates: Presently there are two ways contractors are adding aggregates to this flooring. The first is to broadcast the aggregate into the wet overlay right after placement. This process is all about timing, because if you broadcast too early the aggregate will sink, and if you broadcast too late the aggregate will not properly sit into the overlay. Appropriate timing can also vary due to air temperature, the weight of the aggregate and the thickness of the overlay.

The other method is extending the overlay with aggregates in the mix prior to placement. This process requires the most amount of skill — the added aggregate will reduce the leveling capabilities of the self-leveling material.

The polishing process: Typically the grinding process starts 24 hours after placement. The choice of first grinding step depends solely on the overall flatness of the overlay. Generally with a broadcast-aggregate floor, a 40 metal would be a realistic starting point. With an integrally colored or uncolored overlay with limited tool marks in the floor, an 80 metal should do the job.

With our overlay the purpose of the grinding steps is to remove the skin and the thin cream layer of the overlay, exposing the fine sands. Once all the fines are exposed, refine the scratch pattern and polish to your desired gloss level.

Joe Zingale is the flooring group specialist for CTS Cement | Rapid Set, a manufacturer of specialty fast-setting cement repair products. Reach him at jzingale@ctscement.com.



Concrete Genius, a Trinidad contractor, completed 16,000 square feet of polished overlay work at this Hi-Lo Food Store in Maraval, Trinidad.

Photos by Henry Khoo

The bistro area in the new Ardex American's facility includes Pandomo Loft RAL 7037 Dusty Grey and Pandomo Wall RAL 5003 Sapphire Blue.

The conference room features Ardex PC-T Polished Concrete Topping.

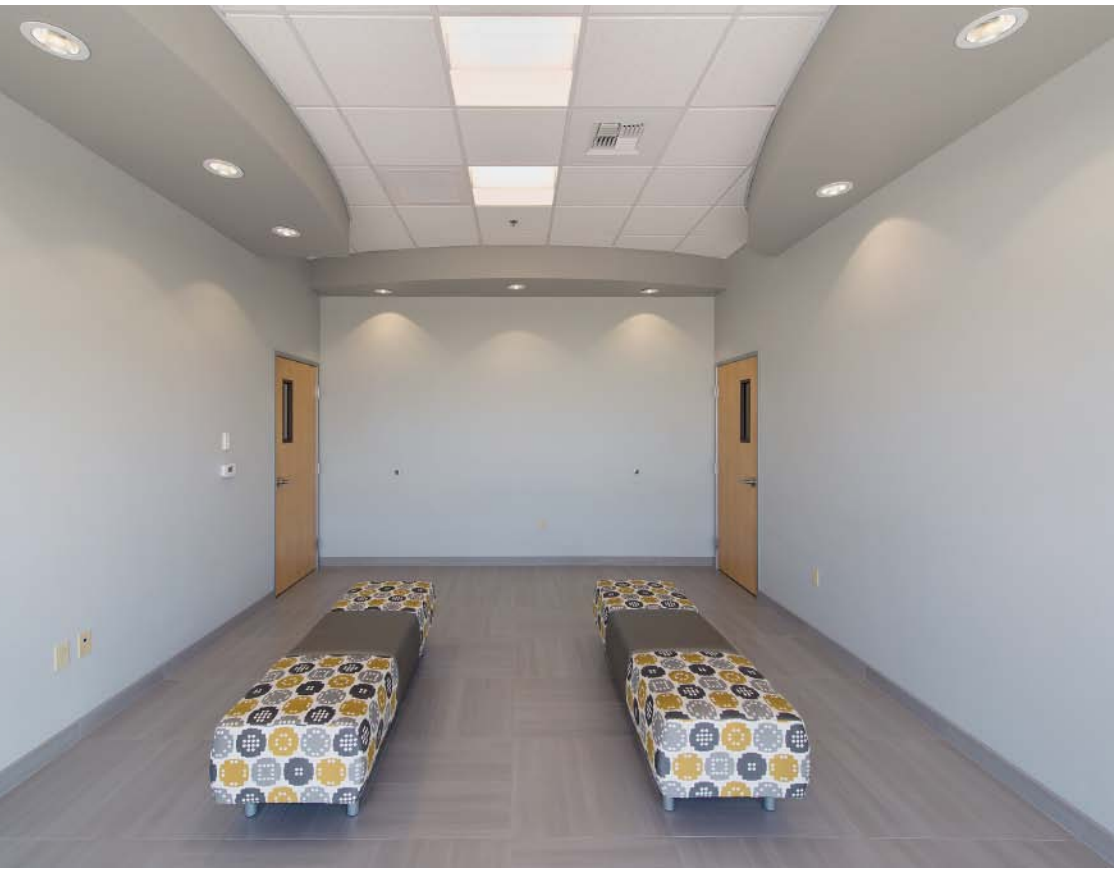
The building's exterior.

Ardex showcases product lines in new California facility

Ardex Americas is slowly transforming each of its six North American locations into showcases of the manufacturer's products. The new manufacturing, distribution and training center in Stockton, Calif., was built from the ground up, so the company was able to incorporate many Ardex products into the specifications.

The 55,000-square-foot facility features polished concrete toppings, overlays, vertical applications, and grout and mortar, all manufactured by Ardex.

Joey Koslosky of Koslo Corp., Tracey, Calif., and Ardex technical representatives Pat Cunningham and Paul Cain were the installers for the assignment. Roy Cotterill, partner at Perkins, Williams & Cotterill Architects, Rancho Cordova, Calif., served as the architect.



The lobby area of Ardex America's new Stockton, Calif., facility features: Ardex X 77 Microtec Fiber Reinforced Thin Set Mortar; Ardex FL Rapid Set, Flexible, Sanded Grout; and Ardex X 5 Thin Set Mortar.

PRODUCT SHOWCASE

PROJECT PROFILE

Polished Floors Add New Dimension to Science Museum

Perot Museum of Science and Nature, Dallas, Texas

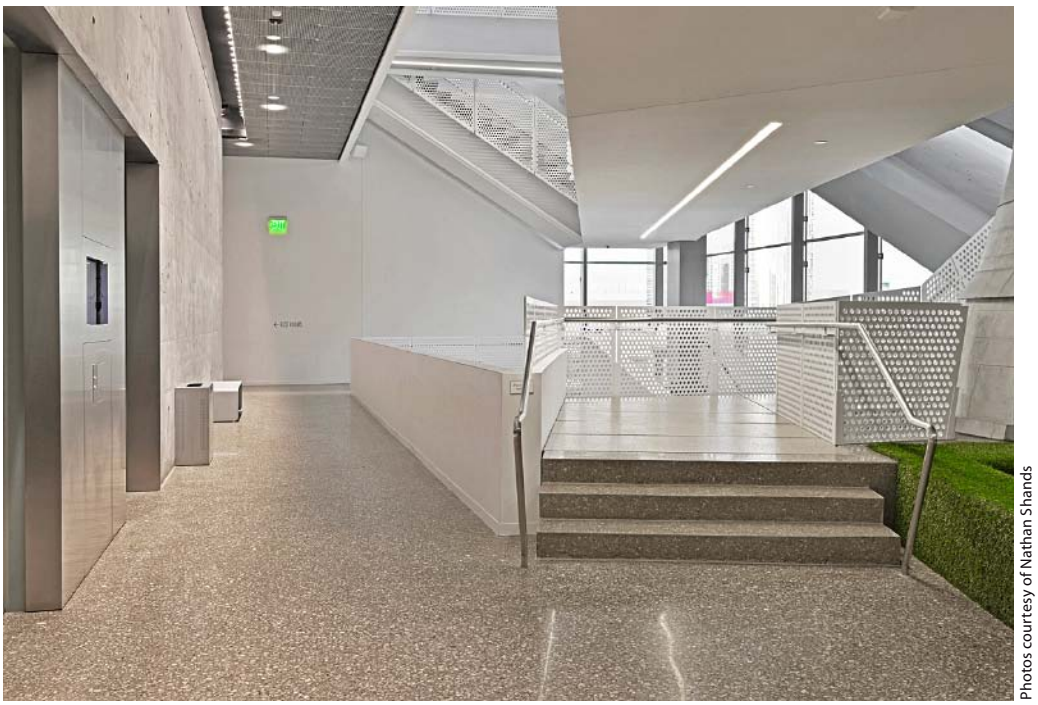
by Joe Maty

The Perot Museum of Nature and Science, which opened Dec. 1 of last year, is billed as providing visitors with a living science lesson full of hands-on learning experiences.

This mission extends to the building structure itself. "Part of the idea is the building as exhibit," says Aleksander Tamm-Seitz, the museum's project designer for Morphosis Architects, Los Angeles. "It was not about covering everything up. We were very much seeking to partially expose the structural and building systems."

Thus, the visitor is able to view extensive sections of the concrete and steel that form the structure. "We let the building materials be a lot of the finishes," Tamm-Seitz says. The building is a tool that educates on what building construction and building materials are all about, he says.

What Morphosis and the building contractors did with the concrete — and the design generally — also gives the Perot a striking visual impact.



Photos courtesy of Nathan Shands

Project at a Glance

Client: Perot Museum of Science and Nature, Dallas

Decorative concrete contractor: Texas Bomanite, Dallas, Texas

Architect/designer: Morphosis, Culver City, Calif.: Thom Mayne, design director; Kim Groves, project principal; Brandon Welling, project manager; Arne Emerson, project architect; Aleksander Tamm-Seitz, project designer

Associate architect: Good Fulton & Farrell, Dallas

General contractor: Balfour Beatty Construction, Dallas

Landscape architecture and site sustainability: Talley Associates, Dallas

Structural engineer: Datum Engineers, Dallas

Project description: Deep-grinding 30,000 square feet of concrete flooring to achieve a high degree of aggregate exposure, then polishing.

Densifier used: Vexcon Chemicals Inc.'s Starseal PS Clear potassium silicate densifier

Grinders used: HTC 800 Classic, HTC 800 HDX

Morphosis was started by design director Thom Mayne, a winner of the prestigious Pritzker Architecture Prize, and his partners in 1972. The firm calls its approach to design "combinatory urbanism" and "ecotopia," reflecting its goal of integrating buildings with their urban settings. The firm's designs also feature layered architecture that departs from more traditional forms.

A *Dallas Morning News* article (November 2012) applauds the Perot's look of a striated cube above an undulating base, interpreted as a sort of "block of sedimentary rock thrust up out of the ground," with random streakings that appear to fade on the building's higher reaches. The structure joins other Morphosis works that produce a "dynamic, kinetic, active" energy, the firm's design director Thom Mayne said in a *Dallas Morning News* review.

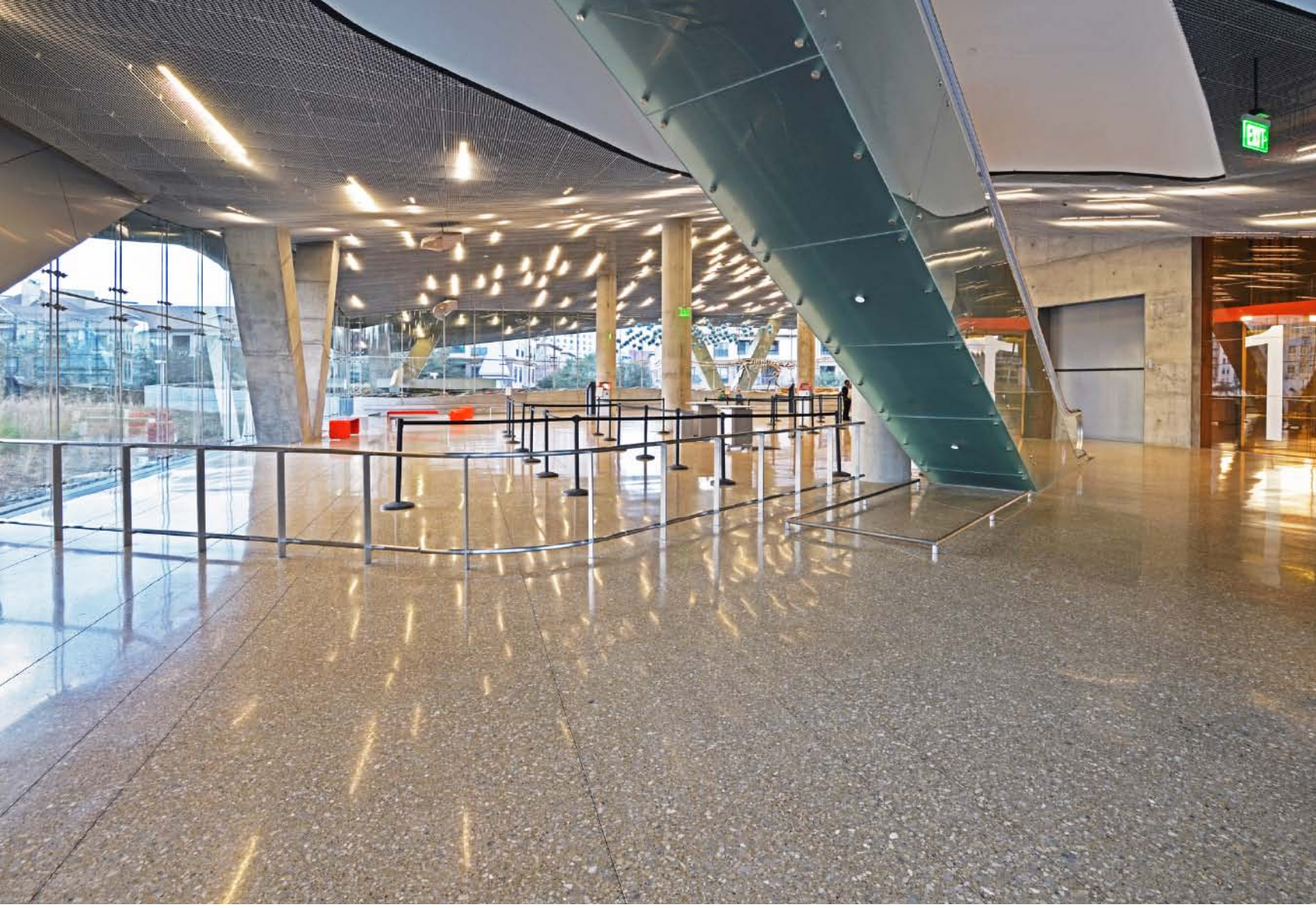
Contrasting with an exterior that evokes sedimentary rock layers is a diagonal, transparent glass tube on the side of the building that houses a continuous-flow escalator, a more tech-oriented scientific visual.

The design's sustainable attributes include a roof of rock and drought-resistant vegetation indigenous to the area, a rainwater collection system for nonpotable water and irrigation, LED lighting and off-grid hot-water generation. The design captured the highest ranking given by the Green Building Institute — four Green Globes.

An integral component of both the "building as exhibit" concept and the sustainable design are the museum's extensive polished concrete floors, the handiwork of Dallas-based Texas Bomanite.

Harder than expected

Texas Bomanite's assignment from the designers presented a formidable task: Deliver a premium grind and polish to more



than 30,000 square feet of concrete floors in the Perot, with the objective of exposing aggregate to give a terrazzo-type look but also emphasizing the concrete's inherent visual characteristics.

Texas Bomanite was brought into the project planning early on, during construction budget planning. Chandler Balch, the company's chief estimator, says Texas Bomanite's track record in the region — and its relationship with general contractor Balfour Beatty Construction — likely figured in its bid to join the Perot project team. "We have a solid reputation in this region on projects of this magnitude," he says. "And this is right in our backyard."

The Perot job encompassed concrete flooring in corridors, elevator and escalator landings, the entire first floor, most of the basement, and common areas leading to exhibit halls, Balch says. The architect's plans called for a terrazzo look exposing large aggregate.

Easier said than done, Texas Bomanite soon found out.

The work commenced on the top floor and would progress downward from there. But Texas Bomanite discovered quickly that diamond grinding was not going to be adequate to produce the aggregate exposure the design team was looking for. The concrete was harder than they expected.

"After a couple of weeks of evaluating our production, we realized we had a big problem," Balch says. "We were in a big hole labor-wise and realized we had to resort to something else." The grinding crew tried various approaches including "every diamond under the sun," he says.

Balch says the concrete mix was likely the source of the high degree of hardness.

Representatives of two major suppliers of diamond-polishing equipment suppliers visited the site and met with Texas Bomanite's superintendent, trying to figure out what it would take to get the flats cut and get the aggregate exposure the owners wanted.

Balch notes that the specified aggregate exposure mandated a deep cut of 1/4 to 1/2 inch into the surface.

"We had to bring in our concrete shaver because we were going through too many diamonds. Even that was pretty slow," he says. "But in the end we got the result we wanted, to move on."

After successfully milling the surface to achieve aggregate exposure, the diamond grinding and polishing process proceeded. The initial, 40-grit metal-bond diamond grind step was performed wet to address the "gnarly" profile left by the shaver, Balch says. The grinders used on the job were the HTC 800 Classic and HTC 800 HDX.

Following the initial grind, the sequence moved on to a grind with 150-grit metal-bond diamonds, followed by application of a potassium silicate densifier, Vexcon Chemicals Inc.'s Starseal PS Clear. Grinding and polishing continued in succession with 150-grit metal-bond diamonds, transitional diamonds (hybrids of metal- and resin-bond) in the 80-100 grit range, then resin-bonded diamonds of 100, 200, 400, 800, and 1,500 grit. The Vexcon densifier was utilized a second time as a stain guard, followed by a burnish employing 1,500-grit diamond pads.

In a departure from the minimalist approach that emphasized the basic flooring material, Texas Bomanite added a modest decorative flourish on the first floor, saw-cutting a linear joint pattern in the concrete before the final burnish. Morphosis' Tamm-Seitz describes the pattern as variably spaced parallel lines that represent a departure from a conventional control-joint placement. "These were added from a design standpoint to help tie the interior and exterior flatwork together, as the main exterior plaza and exterior roof deck off the lobby carried the same scoring pattern."

From a big-picture perspective, Balch says Texas Bomanite in the end succeeded in delivering on the visual and performance objectives laid out by the owners and Morphosis. The museum is drawing sellout crowds, and the owners are counting on the floor to stand up to the traffic.

On top of the challenge presented by the grind and polish specified, the job required careful scheduling in order to coordinate with other trades, Balch says.

Hard work pays off

Project designer Tamm-Seitz gives Texas Bomanite high marks on the project, calling the result "a beautiful product for how cost-effective it is."

"When people look at it they think it's a very expensive floor, but we tell them no,

that's the structural slab."

Tamm-Seitz theorizes that fly ash in the mix design could have played a part in the concrete's unexpected hardness and the resulting challenge facing Texas Bomanite. The architects specified a high percentage of fly ash in keeping with their sustainability objectives.

When high-volume replacement with fly ash occurs, the resulting concrete does not harden quickly, but it will get even harder than standard concrete, he says. "All mixes are different, but usually high-volume replacement will make concrete stronger."

What's more, he says, some of the museum floors had been there quite a long time before they ground them. Typically, the grinding and polishing of floors in such projects is sequenced late in the construction schedule to prevent damage from other trades, he says.

It was worth it. Tamm-Seitz says the exposed-aggregate concrete floor provides a connection to the building's other concrete elements, in particular the sandblasted plaza surfaces. The exterior concrete also exhibits a high degree of aggregate exposure.

The locally sourced aggregate also meets sustainability objectives, while providing a connection to the local geography, Tamm-Seitz adds.

"With the concrete, we were interested in working with materials that are local and regional and make sense in that area," he says. "The nice part about grinding is that you expose the aggregate, and that ties back to the locale of where the building is. We have done this with many projects.

"The (diamond) ground floor in Dallas will look different from the ground floor in San Francisco. In San Francisco, you might have a more bluish and grayish palette. In Texas, it would be warmer, with more browns. This really affects the feel of the space. And we also use it for practical reasons, for maintenance and longevity."

www.texasbomanite.com

Gloss Readings Help You Finish Floors That Shine

by Joe Reardon

In our industry we are often asked: What's the gloss on the floor? Or, did you hit the gloss readings that are in the specification?

Let's discuss this from a couple points. First off, where did the concept of "gloss" even come from, or how was this brought into the industry? Second, let's see how this can hurt you and help you. Third, did you do chemicals, not the illegal ones but the "cheating" ones?

Last but not least. let's look at the Concrete Polishing Association of America and how we are industry people working on a standard for the industry.

Gloss readings came about because of the "big box" retailers and the architects as a way to validate the finish on a finished concrete floor. In the beginning the thought process was that you wanted an extremely shiny or a high-gloss floor. Early specifications called out for gloss readings in the 50 or 60 range. As you all know, this is the typical shine sought after by extremely high-end retailers.

This look is great for moderate foot traffic. But for use in a warehouse-type setting or home improvement setting with lots of foot and forklift traffic this specification became unrealistic. Remember the higher the shine on a floor, the more maintenance that will need to be done in order to keep this shine. Think of a Lamborghini off the showroom floor.

Let's define what we are actually talking about before we get too deep into this conversation. Most of us in the industry are familiar with Horiba Gloss Meters. When we are talking finished concrete floors we are looking to measure the specular reflection in a surface. This is typically done at the 60-degree setting on your machine. Make sure you calibrate your device. (We will get into the CPAA definition of "gloss readings" in a bit.)

Typically gloss readings are taken in a pattern or a grid-type setting with so many readings per so many square feet per floor. You throw out the high and the low and gain an average reading of the surface. To clarify, this is not where we set the gloss meter on the floor and demand each section read exactly the same way.

Typically gloss readings are a blessing in disguise for applicators and manufacturers who work together on projects. When you have a properly educated owner, architect and general contractor, you can sit and discuss how a gloss meter can be used as a device that will allow all parties to fully execute a specification after setting out guidelines. You can talk about how to actually measure what has been done on a floor.

In some cases we need to examine what could possibly go wrong on a floor and why it would not meet a specification. Carbonization, poor mix design, and so on can all play a part in a floor not meeting the gloss requirements.

Misusing guard

When discussing these poor finishes or these poor conditions, for some of you one word comes into play: GUARD. Now calm down — some of you, not all of you, are victims of this product, but to be quite frank it's your own fault and, yes, also the fault of some salesperson out there. Guards are a great product and are needed in this industry without a doubt, but in the proper setting and the proper design in a facility. What we typically criticize is the abuse these products received in their early years and still in some situations today, creating what is otherwise known as the "chemical shine."

There have been many advancements in guard technology, and when used correctly they provide owners and architects with the floor that was envisioned. But they should not be used at 100 or 200 grit to achieve a

gloss reading to get out of a job.

My advice is to obtain the gloss reading before the application of any protective treatment that is on the market today.

Establishing gloss standards

What the Concrete Polishing Association of America is trying to do for its industry is define what actual gloss readings are and what we should be focusing on.

I want to describe what we are looking at in the CPAA.

1. Reflective clarity: When viewed five feet above and perpendicular to a surface, the degree of sharpness and crispness of the reflection of overhead objects.

2. Reflective sheen: When viewed at 20 feet from and at an angle to a surface, the degree of gloss reflected from a surface.

When discussing the above, what we want to achieve is the clarity or the crispness of an image in the floor or how well can you read a logo in that reflection.

Whether you are working on a retail store or a garage, understand what you and your customer are looking for when you are discussing the completed surface. A gloss meter is a great tool when used properly and when spelled out in the specifications that you are working on. Take charge on a job whether you are bidding it or whether you are designing it. Know the function of the space and what will it be used for. This will help determine how you specify gloss. And oh yeah, the best floors are the ones in which a 30-to-40 gloss reading is achieved before guard.

Joe Reardon is a concrete products group specialist at Prosoco, where he promotes high-performance flooring products, develops new business, troubleshoots job-site problems and conducts training. He is a member of the American Concrete Institute and a part of Committee 302 and Committee 310, a member of the Construction Specifications Institute, and a founding member and board member of the Concrete Polishing Association of America. Contact him at jreardon@prosoco.com.

Basic Facts About Colloidal Silica Densifier

by David Loe and Steven H. Miller, CDT

Colloidal silica was introduced as a concrete densifier about nine years ago, and it has proven itself a reliable tool for concrete polishers and others needing to harden or densify cured concrete surfaces. However, there seems to be widespread confusion about what it is, and this confusion sometimes leads to misinformation. This article attempts to bring some clarification.

The easiest way to clear the confusion is, first, to get the names of the players straight.

Silica is the common term for silicon dioxide (47 percent silicon and 53 percent oxygen, by weight). Quartz crystals are silica. So are some kinds of sand.

Silica is one of the two main ingredients in portland cement. Siliceous clay is mixed with limestone (calcium carbonate) under high heat to make cement. The carbon is driven off by the heat, so the two main ingredients that remain are hard substances, calcium and silicon.

When water is added to cement powder, it reacts and forms compounds called calcium silicate hydrates (CSH). As a byproduct, it also forms hydrated lime (calcium hydroxide, also known as lime, slaked lime and portlandite but not to be confused with free lime, a different substance). Hydrated lime can constitute up to 25 percent of hardened cement paste but adds no strength to the concrete.

Colloidal silica is a mixture of a liquid and silica particles. It is a colloid, not a solution. In a solution, the solvent (such as water) breaks the "active ingredient" down to individual molecules. A colloid has larger particles, solids, that stay suspended in the liquid, carried by it but not broken down by it. Milk is a colloid.

The silica particles in colloidal silica densifier are nanoscale in size. General-purpose colloidal silica densifiers feature particle sizes of 5-8 nanometers (nm) — about 2-4 ten millionths of an inch. A colloidal silica densifier that is specially formulated for soft concrete features particles of about 40-45 nm. Particle size is controlled as part of the manufacturing process.

Colloidal silica cannot be made simply by mixing silica into water. The high-tech industrial process begins by stripping sodium (and a considerable portion of contaminants) from sodium silicate and then suspending the purified silica in a low-surface tension liquid.

The term "colloidal silica" always refers to a liquid material. It should not be confused with silica fume, a dry, powdery material used as a concrete admixture that has particle sizes of about 150 nm (about 6 millionths of an inch).

How densifiers densify

All concrete densifiers react with the useless calcium hydroxide and turn it into useful CSH. Since calcium hydroxide is intermingled in the hardened cement paste, the reaction creates additional paste inside the pores of the existing paste. The paste gets denser, which makes it harder.

It is sometimes claimed that densifiers make new CSH crystals. This is inaccurate. Cement paste is not a crystal to begin with. Crystals are molecules stacked together in a regular, repeated pattern. In contrast, CSH is technically a gel. The molecules are packed together and hard (not squishy like the gel in the toothpaste tube), but they do not form a regular, repeated pattern. The CSH made by densifiers is functionally equal to the original paste.

The commonly used concrete densifiers are colloidal silica, sodium silicate, potassium silicate and lithium silicate. An older densifer, magnesium fluorosilicate, is rarely used anymore.

Differences in silica

The goal of all concrete densifiers is to deliver a reactive form of silica down into

the microscopic pore system of the cement paste. They all use a liquid to carry the silica. The differences are in the form of silica and how the silica is made to stay in the liquid.

Colloidal silica delivers virtually pure silica in nanoparticles small enough to penetrate the pore structure. The liquid has very low surface tension and carries particles below the surface. The pure silica particles have a relatively higher proportion of reactive sites than silicates, so they react very efficiently.

In the pores, colloidal silica creates new CSH that bonds to the existing CSH. Colloidal silica also bonds directly to other silica, including itself. When applied to concrete, it reacts, bonds and then uses that bonded silica as a platform for additional bonding. Silicate densifiers do not do this.

Silicate densifiers are compounds of silicon and a high proportion of mineral salts. (Sodium silicate molecules, for example, are 38 percent sodium by weight and only 62 percent silica. Commercial sodium silicate has even lower silica content due to contaminants.) They are also colloids, but the particle size is highly variable. Sodium silicate, for example, can range from 2 nm up to 500 nm. When silicate densifiers release silica to form CSH, they leave behind the mineral salts. This is why sodium silicate and potassium silicate must be scrubbed off, to prevent the residual salts from forming hard, discoloring deposits. Lithium silicate also leaves deposits if it is overapplied. Colloidal silica is 99.5 percent pure silica, so residual deposits are not an issue.

Because it can be applied to build up on the surface, colloidal silica can be burnished to a high sheen in a way not possible with silicate densifiers.

Performance

There are no real standards for densification. However, properties such as abrasion resistance and surface hardness are considered indicators of densification. Colloidal silica densifier has been tested in the lab and in the field using the same methods used for other densifiers. It is effective at hardening for polishing and for other floor-finishing operations. It eliminates dusting and improves abrasion resistance. It is a clean, ecofriendly densifier that minimizes labor.

Colloidal silica has also recently begun to be applied to freshly placed concrete, formulated with special additives as a troweling aid. Not only does it extend finishing time and make finishing easier, but it eliminates the need to add excess water in order to achieve a smooth surface, thereby delivering a slab that is at least as hard as intended in the mix design. In fact, use of the colloidal silica troweling aid showed significant performance improvements over slabs finished with extra water or finished dry: increased surface hardness (25 percent to 30 percent), reduced tendency towards ASR pop-outs, and reduced curling.

David Loe is president of Lythic Solutions, maker of Lythic Densifier. Reach him at davidloe@lythic.net.

Steven H. Miller, CDT, is an award-winning writer and photographer specializing in issues of the construction industry. He can be contcted at steve@metaphorce.com.

J.C. Penney Remodels Continue as Wave 3 Crests

The troubled department store chain is polishing its image with a mammoth decorative concrete makeover

by Stacey Enesey Klemenc

As J.C. Penney Co. continues to try to regain its foothold in the market after ousting CEO Ron Johnson, industry experts contend the company isn't likely to toss out all of Johnson's ideas. "I think Ron's concept was right," says Scott Metzger, vice president of Metzger/McGuire, a company involved in Penney's recent renovation efforts. "He just tried to do things too fast perhaps."

That said, interim CEO Mike Ullman forged ahead with the "shop-within-a-shop" concept as Wave 3 of the stores' remodeling makeover took place this spring in JCPenney stores across the country. Polished concrete is still part of the plan … at least for now.

500 stores

When JCPenney announced Wave 3 of the national remodeling program was about to begin, nearly 700 stores were reportedly out to bid. But in the end, that list was whittled down to about 500 stores, according to a company press release.

Photo by Mario Cruz, Hunter Advanced Concrete Polishing, Omaha, Neb.

Each night, the merchandise is covered before work can begin on the "streets" in this JCPenney store at West Towne Mall in Madison, Wis. This particular job features CTS Cement's Rapid Set TRU overlay.

New Players Catch the Wave

Some polishing contractors on JCPenney's approved list who didn't pick up any work in the previous waves landed contracts in this surge.

"The first wave was a massive rollout creating chaos abroad," says Ryan Klacking, president of Michigan Maintenance Solutions, in Dearborn, Mich., who doesn't regret not winning any bids in Waves 1 or 2. "Everything was revealed at the last minute. There was no real prep time."

This time around, however, he was able to walk several stores and understand the client's expectations before accepting the job. "Several stores had to be reworked after they were completed last time," he says, and he wanted to avoid those pitfalls.

In Wave 3, Michigan Maintenance was responsible for demolition, repair and polishing in three Michigan stores. All of the areas involved had been covered with ceramic tile which had bonded well — make that too well — with the underlying concrete slab. Consequently, "Demolition was tough and slab repairs were extensive," Klacking says. "Polishing was a small piece of the project in comparison."

Klacking concedes that some polishing contractors were hired for this wave that had no business attempting the work. "Several companies were thrown off jobs because they could not meet the schedule and expectations. We were called to take over several projects. In some cases, we were able to get the companies on the right track, but on others extreme rework had to be done."

Overall, he says, "I think the extensive amount of repairs required to meet JCP's expectations will strengthen the industry" and keep expectations high when it comes to polished concrete.

Unlike with Wave 1, there was no hard start this time, says Metzger, whose company supplies the joint and small-crack repair filler for the renovations. Most construction began sometime in February and was supposed to end April 15, he adds, but his company was still selling materials in early May.

"This wave didn't kick off as quickly as the last one so there wasn't as much scrambling (for materials)," says Bobby Watson, national sales and training manager for AmeriPolish.

AmeriPolish and Prosoco supplied the densifier, stain guard, dye and stain for all three waves. For this wave, Prosoco also supplied RealCrete PC, a new repair and patching product the company introduced at 2013 World of Concrete. Rapid Set TRU from CTS Cement Manufacturing Corp. was the other approved wide-surface repair product.

After being forced to use a jackhammer to remove stubborn ceramic tile at the JCPenney store at West Town Mall in Knoxville, Tenn., the Yarbrough Concrete Polishing crew had to pour a brand new floor using Rapid Set TRU because the damage was so severe.

Photo courtesy of Yarbrough Concrete Polishing

"Waves 1 and 2 put a stop to a lot of work elsewhere because contractors were floating jobs back and forth. This wave was more strategized," says Tabitha McCarter, vice president of operations for Yarbrough Concrete Polishing, in Knoxville, Tenn. "The first wave was fast and furious but this one was a little more planned. Contractors had a heads up as to when it was going to start."

"I thought this wave went much more smoothly than the first two," says Doug Wright, general manager of Rite-Way Concrete Seal Systems Inc., in Wolcott, Ind. "JCPenney had a better understanding of the polishing process and their expectations were more realistic than before."

Although many contend there was technically an approved list of contractors based on the previous one, it wasn't followed very well. "JCPenney gave the general contractors the freedom to move away from the list at their own discretion," says Watson.

This meant more companies were bidding on projects and bidding wars ensued. Consequently, many in the industry believe, the quality of some work suffered when less experienced companies won bids with very lowball figures but were ill-equipped to handle the rigors of polishing.

This phase also included the introduction of "streets," widened pathways paved with polished concrete in a gray color dubbed JCP Street.

Also, unlike previous waves in which contractors were overhauling carpeted areas and removing layer upon layer of glue, this

Photos by Doug Wright of Rite-Way Concrete Seal Systems, Wolcott, Ind.

A "street" in the JCPenney store in Merrillville, Ind., near Chicago. Polishing contractor Rite-Way Concrete Seal Systems used Prosoco and Metzger/McGuire materials throughout.

time they were removing old aisles. Slabs were jackhammered to death to remove ceramic tile and, in the process, big chunks of concrete. "Many of the (future) streets were in such bad condition they had to be overlaid," says Watson.

One store in West Town Mall in Knoxville was so badly damaged after the tile removal, McCarter says, she had to pour a brand-new floor. "Whoever put tile in there wanted it to be permanent," she says.

The streets

In Wave 3, about 500 JCPenney home departments were renovated with updated lighting, fixtures and flooring to differentiate the "shops" that feature specific brand names. Unlike in Waves 1 and 2, the new shops' floors don't feature concrete but rather coverings such as carpet and laminate.

And, of course, there are the new streets. Designed to make the shopping experience more enjoyable, the streets' primary aisles range between 12 and 14 feet wide, with side aisles about 10 feet wide. Total footage of the streets in each store's home décor section range from as small as 3,500 square feet up to 12,000,

Controversy Motivates Many to Pass on Wave 3

If you didn't catch the last wave of J.C. Penney Co.'s ongoing renovation, you're not alone. Plenty of contractors decided to sit this one out.

First, there was so much negative publicity about JCPenney's financial status. Many polishing contractors turned down work because they were unsure of the company's stability and whether it would be around long enough to pay them.

Next, most cited at least one of two reasons. One, they were put off by the piddly amount many general contractors wanted to pay per square foot to repair and polish aisles during this wave when constructing the "streets." Two, they were concerned about how long it took to get paid for Waves 1 and 2, which encompassed polishing areas for the Levi's, The Original Arizona Jean Co. and Izod shops. Some subcontractors reportedly had to wait 120 days or more to get paid.

"We attempted to participate (in Wave 3) but the general contractor wanted us to come down to $4.50 a square foot and we weren't willing to do that," says Sam Godbey, director of operations in the decorative concrete division of Artistic Surfaces, in Pompano Beach, Fla. "It's too hard to travel on that kind of money when I have to pay my guys a per diem (on top of wages)." In Waves 1 and 2, Artistic Surfaces was subcontracted to do seven stores in Florida and South Carolina and later hired to repair two others.

Tommy Clay, general manager/owner of Ardor Solutions, in Oklahoma City, Okla., and Charleston, S.C., says his company, which had done eight stores in the previous waves, also declined the work. "There was a risk there without fair compensation for that risk," he says. "We had bid work at a price based on the scope given to us and were unwilling to quote a polish-only price plus change orders after the fact."

Besides that, he adds, for Waves 1 and 2, the promised net payment in 15 days stretched into more like 45-60 days. "And that was frustrating," Clay says.

As it turns out, JCPenney secured a $2.25 billion loan this spring from its investors to pay for capital expenditures, day-to-day operations and some of its debt. As a result of that, people are getting paid for this wave in a timely manner.

"So that's one highlight," says Joe Reardon, concrete product group specialist for Prosoco. "Everyone I know has received their checks so far. They just don't know if they'll get any more work from them any time soon."

with most averaging between 7,000 and 10,000 square feet.

This made for a big change in the layout of each store. In the three stores Wright worked on in Wave 3, the street pattern layout was "completely different from" the previous aisle pattern, he says.

Several contractors reported the streets they worked on kept changing in the middle of the job. "Just when we thought we were done, they added more square footage to the job," says McCarter.

Impact on the polishing industry

Unlike Walmart and other retailers that have chosen to use polished concrete floors throughout a store, JCPenney is the first major retailer using polished concrete to define areas. "In the Penney's scenario, polished concrete becomes the enhancement." says Metzger. "Most other retailers look at polished concrete's lower maintenance cost while JCP is looking at it as being more aesthetically pleasing than alternate flooring systems. They are definitely believers of using concrete as a decorative element instead of a wear element. And that changes the rules."

Watson of AmeriPolish agrees that JCP's decision to go with concrete for its aesthetics rather than its cost has opened up a door for the polishing industry. "Hopefully, Penney's choice will influence other retailers and make them realize it's not just for grocery stores and super-centers," he says.

Wright says he can't speak for national retailers but he thinks the work has made an impact in his area. "We've had a number of local businesses tell us they'd like

A large area of the Merrillville, Ind., store was remodeled in the recent waves. With the lighting in place, the newly polished streets really pop. Rite-Way Concrete Seal Systems, Wolcott, Ind., served as the contractor.

Photo by Ryan Klacking, Michigan Maintenance Solutions, Dearborn, Mich.

In this stand-alone store in Canton, Mich., the contractor polished the existing underlayment, but all the joints had to be rebuilt with Rapid Set TRU. It was a massive repair project.

something similar to the floors at Penney's," he says. "(JCP) managers have told us people are asking about the floors. Customers want to know who installed the floor and what process was performed."

He also notes the floors are a great reference tool because potential customers can conveniently see polished floors in action whenever the stores are open.

Work environment

Just like the previous waves, the work in Wave 3 was done at night so the stores could remain open during regular business hours.

"It took a lot more coordination from the applicator to complete the work in one night or, at the very least, make it suitable for foot traffic the next day," says Joe Reardon, concrete product group specialist for Prosoco.

Several things contributed to making the work harder to complete in a timely fashion. Barricades that blocked off the work area had to be put up and taken down each day. Cables had to be run and equipment set up and lugged out each night to store elsewhere on the premises. And in some instances, because of the location, subcontractors couldn't use their generators and had to rely on house power, which limited the number of machines they could run at any one time.

On top of these constraints, "There weren't enough working hours in an evening's time frame to apply the color and stain guard in one evening to finish a particular section," says McCarter. "In some cases, it was taking us twice as long as we projected."

As to pay, having learned from the first wave, several contractors asked for operating money upfront. "And many got it, from what they tell me," Watson says. "At least enough to cover their bills."

Plans for the future

The decorative concrete makeovers seem set to continue despite JCPenney's recent change at the top. "The interim CEO was impressed with what he saw at the prototype store in Texas but there hasn't been any word if the work on the streets will continue," Watson says. "But he'll have to make a decision as to continue polishing the streets or go back and retile. They can't leave them the way they are. I think they're going to step back, recoup some money and decide which way they want to go."

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The White Stuff

How white cement can help you on a color job

by Stacey Enesey Klemenc

In most cases, concrete made from standard gray portland cement will do the job nicely. But sometimes, especially when a pastel color takes precedence in the overall picture, decorative concrete contractors need to think outside the gray.

"There are brights and lights that just can't be hit with gray cement," says Greg Iannone, sales manager for Innotech Decorative Concrete Products.

Photo courtesy of Davis Colors

These samples show how cement color can affect concrete's appearance. Cement samples at the top range from white to dark gray. The cements were used to make the uncolored and colored concrete samples below them.

Luckily, there are alternatives to help decorative concrete professionals achieve pastels and deeply saturated colors, he says. They just need to be thought out in advance.

For one, there's white ready-mix concrete. Other options include stampable overlays, microtoppings and color hardeners made with white cement, Iannone says. Which one to choose largely depends on the individual job.

White-brightened concrete

The American Concrete Institute's working draft of ACI 310R, its new Guide to Decorative Concrete, singles out white cement as a color aid: "White cement is a good choice when developing a colored concrete in applications where the need for color consistency is high, where the color is more difficult to achieve, or to reduce the amount of pigment added to the mixture."

Contractors who deal with high-end architecture and other projects where colors need to be the same from one batch to the next also turn to white-cement concrete as part of their solution.

According to Byron A. Klemaske II, executive vice president of operations for T.B. Penick & Sons Inc., "We use white as well as Type III cement, which is sometimes referred to as poor man's white," although he doesn't know why because the latter is still pretty spendy.

"White and Type III give you a much broader palette of colors. When working with integral color you get lighter and brighter colors with a lower dosage," he says. "You can also achieve a look similar to what dry-shake color hardener will give you."

"Companies specializing in color

use white cement," says Larry Rowland, manager of marketing and technical services for Lehigh White Cement Co. "People will use white portland (and a colorant) to make concrete in gray color tones. If they used standard gray portland it would be difficult to color-match. They pay for color consistency."

Rowland says companies including L. M. Scofield Co., Raeco Inc., Laticrete International Inc. and Mapei Corp. use white cement in their preblended cementitious products.

With repair work, white cement can be helpful since patching mixes usually call for double the amount of cement per volume. "You can mix white cement with your standard gray so when it cures the patch will be lighter and blend in better with the background color," Rowland says.

Contrary to popular belief, white ready-mix concrete is available throughout the country. "It's more common than most people think," he says, adding that white ready-mix has been used to build churches as intricate as Cathedral of Our Lady of the Angels, in Los Angeles, and stores as ordinary as those in the WinCo Foods chain.

"We're able to get our local ready-mix companies to work with us," Klemaske says. "It just takes some coordination and planning since they have to dedicate silos for us."

Rowland notes there may be an availability issue in some places for ready-mix white concrete, a situation he hopes will be remedied once ready-mix suppliers realize white concrete can deliver greater profit than gray.

"It's an incredible product to work with," Klemaske says.

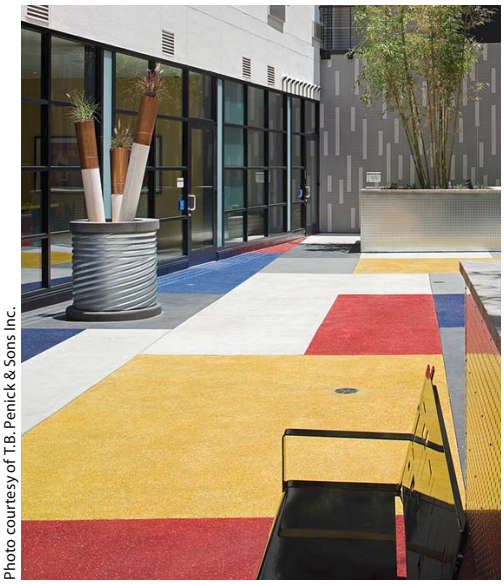

Photo courtesy of T.B. Penick & Sons Inc.

T.B. Penick & Sons Inc. created this vibrant San Diego courtyard with the help of white cement. Each section was seeded with an aggregate or glass material the same color as the integral shade.

Photo courtesy of Ross Urshan

The Waterfront at SeaWorld Orlando features white cement and Innotech Decorative Concrete Products' integral color in Pantone colors. Edwards Concrete, Winter Garden, Fla., did the work.

Overlays and integral color

Another option to help you achieve bright pastel colors is using one of the white cement-based overlays available today, says Paul Koury, president of Westcoat Specialty Coating Systems.

Westcoat TC-25, his company's self-leveling cementitious white overlay applied at about 1/4 inch, can be tinted with as little as a half ounce of liquid colorant per 50 pounds of mixture for a natural, soft look. "The beautiful thing is you can get light buff colors — light tan, pink or sky blue — using integral colorants. Or you can add up to 8 ounces to get a brighter color," Koury says. Regardless of the dose, "The colors won't be muddied."

An acid or solvent-based stain also can be applied atop a white overlay to achieve vibrant colors, Koury says, but integral coloring is his favorite. "The outcome will be more subtle, more natural looking, versus putting the color on top of the overlay," he says. "You can dilute and thin the stain and put it down very lightly, but that's harder to control. I like the stains for accenting the integrally colored cement."

Not to mention, he continues, "It costs less money to tint integrally." You not only save money in coloring products but you save on labor. "There's one less step involved in the process. You can get in and out quicker."

Toppings and color hardeners

In addition to stampable overlays, white microtoppings — which produce a very thin overlay no thicker than a credit card — can be used to achieve pastels and very bright colors. They come as a bagged powder product that mixes with a liquid polymer, says Iannone. "When mixed together it comes out in a pancake batter consistency and is applied with a tapered squeegee to leave a thin coating on the surface."

Photo courtesy of L. M. Scofield Co.

L. M. Scofield Co.'s Chemstain Classic in Faded Terracotta and Black was applied to a white overlay to create vivid light-colored flooring at this Harley Davidson showroom in Glendale, Calif.

Iannone says Innotech can precolor the powder to match a Pantone color chip for a custom blend. "There are minimal order requirements," he says. Custom-colored microtoppings can be expensive, he adds, but less expensive than ready-mix white cement concrete.

"You also have more control with a microtopping versus ready-mix white cement (concrete)," he says. "The color is consistent throughout and is the same batch after batch," whereas there can be detectable color or shade differences from truckload to truckload of white or even gray concrete. "There are a lot of variables that affect the ultimate color of the ready-mix product," including slump, consistency from truck to truck and time of day poured.

Another product that can be applied to lighten a concrete surface is a color hardener that includes white cement as one of its ingredients, Iannone says. Because it is a topical application and not an integral color, "You can apply additional color hardener as needed during the placement and finishing process to achieve the desired color you want."

Expect to use more color hardener to overcome the gray concrete, he says, when you are trying to achieve a lighter color.

Iannone notes titanium dioxide can also be used as a white pigment additive to make concrete whiter and brighter. "But it's very expensive," he says. He recommends methods involving white cement instead.

www.innotechdcp.com
www.westcoat.com

PRODUCT SHOWCASE

Photos courtesy of Concrete Mystique Engraving

Rick Lobdell of Concrete Mystique Engraving prefers gray concrete over white because he says gray gives him more options for color variations. The floor with the hammerhead shark was done on gray concrete while the one with a dolphin was done on white.

In Defense of Gray: An Alternative Perspective from an Artist

Not everyone prefers white cement products over run-of-the-mill gray concrete when it comes to coloring.

"The only time white works for me is if I'm trying to do a water scene," says Rick Lobdell, owner of Concrete Mystique Engraving in Nashville, Tenn. Even then, he adds, he usually prefers gray. "The blues look great (on white) and are very vibrant. But any other time I find it a distraction to perfectly good gray concrete."

Lobdell, who says he is an artist and not a decorative concrete contractor, says that white as a canvas color "kills a lot of color variations because it flattens the look. You don't get as much depth with white as you do with gray."

Besides that, you can leave footprints if you walk on the white surface with shoes. You can't draw with soapstone because it won't show up. Blue chalk is out, too, because most colors won't cover it up.

"To me, as an artist working on concrete, gray is more beneficial because it gives me more options on which direction to take the colors."

A Slippery Problem: Stamped Concrete Near Pools

by Stacey Enesey Klemenc

The combination of pools and stamped concrete doesn't necessarily spell disaster. For one thing, when a stamped concrete surface near a pool is slick, a topical sealer, not the texture, is often the culprit. That's good to know when you're hoping to keep customers from slipping on their new surface.

There are several techniques and products you can use to make a stamped surface less slippery when wet. One of the standard methods involves mixing a nonslip additive such as SureCrete's SureGrip, H&C SharkGrip or Matcrete's Rhino Grip into the water- or solvent-based acrylic sealer before rolling it on. You can also broadcast more of the ground-up polymer onto the wet surface while the sealer is still tacky. Some products are available in different particle sizes for more traction or less.

But "less slippery" does not mean slip-free. "We've found that these products work OK," says Tim Kisielnicki, president of Colorado Flatwork Inc., Colorado Springs, a sentiment echoed by many other contractors across the country. "They improve the surface, but by no means do you then have a nonslip surface."

He says he's tried adding glass beads, silica, sand and aluminum oxide to sealers and they all work about the same. "They help but the surface is still slippery."

Kisielnicki says he's had more success broadcasting nonslip additives onto wet sealers than mixing the two together. However, he found that, to get enough texture on the surface to effectively work, he had to add so much product that it discolored the surface, creating an unappealing white powder-like film.

"We've probably stamped concrete around 15 pools in the last 10 years," he says. "And one of the things I tell my clients is that it will be slippery when wet. It's up to them to decide if it's something they can live with."

Cornerstone Decorative Concrete, Holland, Mich., added H&C SharkGrip to a 30 percent solids solvent-based sealer for this pool deck in New Buffalo, Mich.

Photo courtesy of Cornerstone Decorative Concrete

The color hardener route

Other contractors, such as Neil Roach, president and CEO of Creative Construction By Design, Danville, Ill., have found a method they say works for them.

"We like to broadcast a light coat of color hardener just prior to applying the release and stamping. We don't trowel it in — we just throw it on," Roach says. "This is a more permanent slip-reduction technique, rather than putting a polymer grit in the sealer. It embeds a little bit of aggregate into the stamped surface."

Seeding the concrete with color hardener has advantages over combining a sealer with additives, Roach says. "It's not as prominent as polymer grit broadcasted on the sealer. It also doesn't wear off to the same extent as a sealer. When a sealer breaks down, you lose the additive as well."

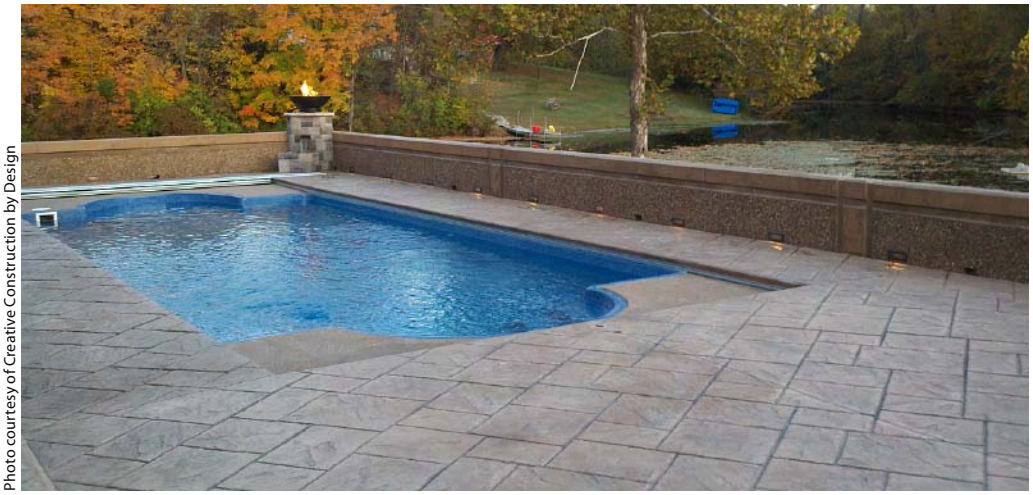

Photo courtesy of Creative Construction by Design

Prior to applying the release and stamping, a light coat of color hardener was broadcast on this pool deck in Danville, Ill., to make its surface less slippery.

Photo courtesy of Unique Concrete NJ

This resurfaced pool deck and patio in Lake Hiawatha, N.J., features Unique Concrete NJ's custom-made field stone stamp and medallion. The integrally colored concrete was stained with a homemade water-based system and sealed with Kingdom Products' Kingdom Cure, a high-solids solvent-based sealer.

Besides seeding to help with slip resistance, Roach advises contractors to keep the concrete surface's slope minimal. "Keep the grade as minimal as possible to increase the coefficient of friction but still control the flow of the surface water. Also, try to use patterns that have a more aggressive texture in the stone."

Better sealer and stamp choices

Carol Brown, director of operations for Overland Concrete Construction, in Olathe, Kan., says pool-deck contractors should avoid stamp patterns such as random stone that are too flat, especially if clients prefer the look of an acrylic sealer.

"You can successfully use acrylic sealers on stamped concrete, but use one with low solids and a slip-resistant additive," she says. Her company has been successfully using Certi-Vex AC1315, a slip-resistant acrylic sealer from Vexcon Chemicals.

For even more slip resistance, you can add ground-up polymer such as SureGrip to the Vexcon product, she says, but no more than 3 ounces per gallon. "Sealers tend to be problematic as is. When you start adding other things to them, you have to be careful not to create a new problem."

If clients are really concerned about a slick surface, they should opt for a penetrating instead of an acrylic sealer. She says she has used Hydrozo Silane 40, a penetrating sealer from BASF, with good results. A silane sealer, which won't affect the color of the concrete or increase the

gloss, is a great choice for those seeking the look of natural stone, she adds.

Brown also cautions contractors to be aware of the amount of acrylic sealer they are putting down. "The more you put down, the smoother and slipperier the surface gets. Too much and you'll get sealer failure."

Aluminum oxide grit

Finely ground polymer materials aren't the grit additives of choice for everyone, says Scott Hubbard, sales manager for Sundek of Austin, Texas. He prefers to broadcast or integrate aluminum oxide into his company's sealers to make a surface less slick. He likes broadcasting best, he adds, because he can achieve a heavier coverage.

"I think aluminum oxide works better," he says about the powdery substance. "It's less expensive and you can get it in multiple colors. And you don't get that hazy look like you get with SharkGrip."

Hubbard says he usually uses Sundek's 18 percent or 30 percent solids solvent-based acrylic sealer on stamped surfaces. "Overall, I prefer the 30," he says. "The 18 percent is not as slick around a pool but it has to be applied more often because it's not as durable. A clear seal with less solids doesn't give as much protection."

Photo courtesy of SureCrete Design Products

Alberto Correa, of Boldster Concrete Surfaces, Tampa, Fla., used materials from SureCrete Design Products, including SureGrip for slip resistance, to create this pool deck.

Clear acrylic sealers with aluminum oxide additives will eventually wear away. On average, Hubbard estimates, they need to be resealed every two to three years, depending on foor traffic and exposure to UV rays.

Concentrate on the concrete

Todd Fisher, a member of the family-run business Unique Concrete NJ, based in West Milford, N.J., approaches the slippery sealer quandary from a different perspective.

"We concentrate on making the concrete itself better and relying less on

sealers," he says, adding that all their new installations involve integrally colored, densified concrete and usually water-based sealers. "My advice is to make the color as permanent as possible and the concrete as durable as possible so you don't have to rely on the sealer to make a project functional."

There are some situations such as driveways and high-traffic areas, Fisher concedes, where the job will call for a solvent-based acrylic sealer and that's the way he'll go.

"Ideally I would thin a sealer down to as little solids as possible and treat it almost like a wax and apply it on a maintenance schedule. But we are not dealing with ideal situations," he says. "Usually, we thin all of our sealers down to about 15 percent. It seems to be a nice number for preserving texture and staying away from a plastic build."

To further lessen the degree of slipperiness, he trowels and uses Unique's specially made rollers. "We rely heavily on the texture of our concrete to provide slip resistance," Fisher says.

Even placement tool choices can curb slipperiness. "Instead of using a fresno or hand trowel to finish the slab in preparation for stamping ... use only a float," states artisan Steve VandeWater in a post on the website of the Indiana Decorative Concrete Network. "While many stampers prefer a very smooth finish to give them a 'fresh canvas' for texturing, troweling a slab makes it overly slick. Simply floating the concrete instead leaves a sandier finish, which aids with slip resistance. As a bonus, it can also make the texture look more realistic, especially on stone or brick patterns."

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