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Vol. 19 No. 1
January 2019
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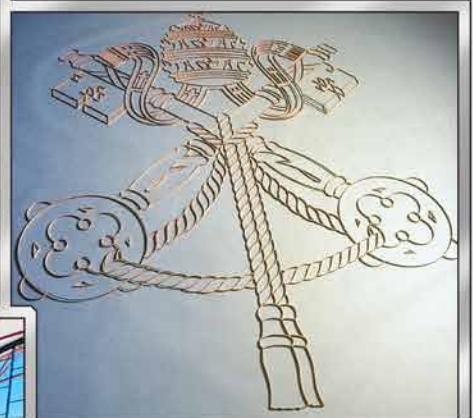
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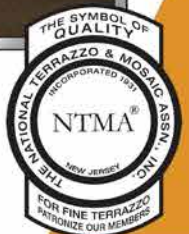
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Publisher's Letter



Dear Readers,

As we kick off *Concrete Decor's* 19th year, we are busily preparing to host our third annual Decorative Concrete LIVE! at the 2019 World of Concrete in Las Vegas. At this event's inception, we were challenged to find ways to include exhibitors in all aspects of the concrete industry. Now its success has led to a new event inside the WOC pavilion at The Buildings Show in Toronto called Concrete Decor LIVE!

The presence of *Concrete Decor* and the Concrete Decor RoadShow in Canada last November gave the decorative concrete industry a new platform on which to build awareness as a recognizable player in the construction market. The event's success has us scheduled to be back in Toronto again in 2019.

Also Oct. 28-31, 2019, the now biennial Concrete Decor Show returns to Texas to promote and support the expansion of decorative concrete both stateside and internationally. If you've never been to the show, don't miss this event in Arlington that only happens every other year. By far, it's the best international gathering of tradesmen and women looking for new technologies, best-in-class education and networking opportunities to maintain their competitive edge. If you're new to the industry, be prudent now and register yourself and key members of your staff.

Traffic at www.ConcreteDecor.net is steadily rising as more people tap into our immense decorative concrete archive. As 2019 unfolds, new services will continue to launch that'll make it faster to find information, products, advice and the ongoing learning opportunities our industry thrives on.

We're learning this trade in new and different ways today. I don't agree with them all because I still believe that trades are best taught through on-the-job mentorship and training programs that start with fundamentals. I also believe our industry will sell itself short if we don't collectively embrace this fact. I recently joined ACI-641 (Decorative Concrete Certification) to better understand, support and communicate its value to our industry. I encourage you to do similarly.

As a long-term planner, it's my experience that keeping the long term in focus prevents ongoing disruptions from affecting a business's daily success. Decorative concrete is a proven and marketable force in the construction and renovation markets. Quality workmanship still trumps the lower quality, lower-cost alternative. Long-term planning may prove that you don't get every job that comes along, but it ensures you get the right jobs and that's where I believe our industry belongs.

All of us at *Concrete Decor* wish you a prosperous, fulfilling year ahead. Enjoy this edition and thank you for choosing *Concrete Decor*.

Happy New Year,

Bent Mikkelsen
Publisher



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On the cover: To protect metallics from the sun's UV rays, a topcoat of urethane is a must.
Photo courtesy of Quality Epoxy LLC

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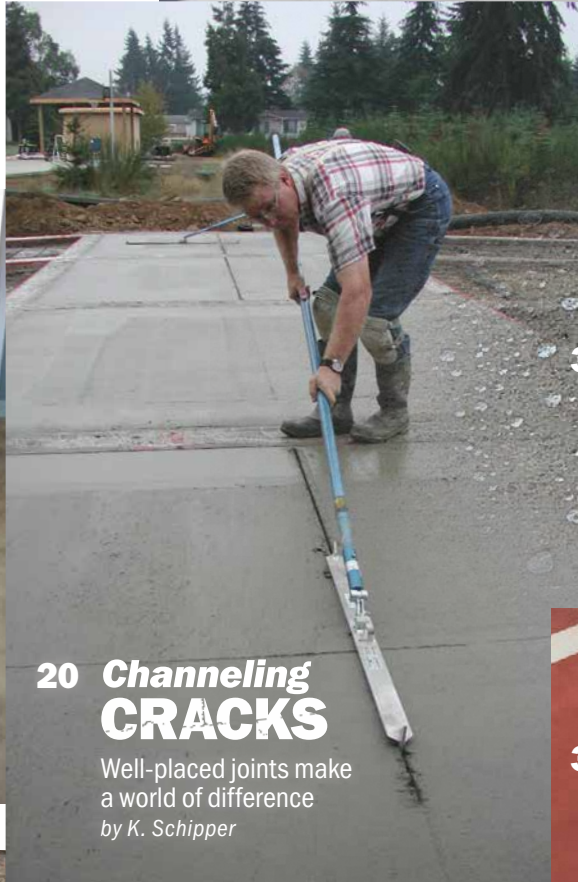


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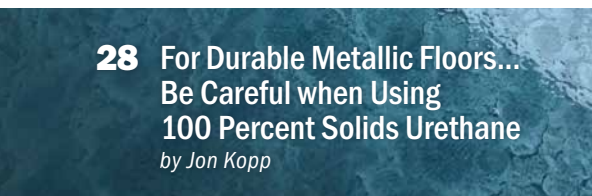


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Greg Iannone is area sales manager for Solomon Colors/Brickform. He has worked in the concrete construction industry for more than 30 years and has provided training seminars throughout the U.S. and Puerto Rico, as well as Mexico and Japan. He can be reached at (801) 376-6750, (909) 434-3274 or giannone@solomoncolors.com. See Greg's article on page 10.



Jon Kopp owns and operates Quality Epoxy LLC in Gilbert, Arizona. The company exclusively uses metallic powders from Cohills Building Specialties Inc., an Arizona-based company that recently began distributing Arizona Polymer Flooring epoxies and polymers. You can follow Kopp on social media at facebook.com/qualityepoxy or visit his website at www.qualityepoxy.com. See Jon's article on page 28.



Rick Lobdell, a classically trained artist with a master's in fine arts in painting from the Savannah College of Art and Design, has also studied math and drafting. In this series, the owner of Concrete Mystique Engraving in Tennessee will explain how he conceives his well-known designs. He can be reached at rick@concretemystique.com. See Rick's column, "Design Theory," on page 50.



Todd Rose, co-owner of VRC Color Systems and plainconcretesucks.com, has more than 22 years of experience in the decorative concrete industry and has won numerous first-place awards from the Decorative Concrete Council. Todd can be reached at (615) 955-1121 or info@vrccolorsystems.com. See Todd's article on page 18.



David Stephenson, based in Dallas, Texas, is president of Retail Polishing Management, a large national flooring installer. Throughout his career, David has owned contracting companies that installed floors as well as manufacturing companies that made products that changed the industry. He can be reached at david@the-rpm-group.com. See his column, "The Polishing Consultant," on page 46.



Chris Sullivan is vice president of sales and marketing with ChemSystems Inc. and a member of the Decorative Concrete Hall of Fame. He has led seminars and product demonstrations throughout North America. Reach him at questions@concretedecor.net. See Chris' column, "Concrete Questions," on page 44.

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2018 Show Debut Concrete Decor LIVE! wows Canadian neighbors

FOLLOWING the 2018 World of Concrete in Las Vegas, *Concrete Decor* magazine received a call from management at The Buildings Show in Toronto, Ontario, Canada, asking if we would be interested in hosting an event like Decorative Concrete LIVE! in Toronto inside the show's World of Concrete pavilion.

At *Concrete Decor*, we saw this opportunity as an effective way to support the industry's expansion in the Canadian market. Adding to our enthusiasm it was also agreed that expanding *Concrete Decor* magazine's reach with international service in Canada would stimulate further interest in decorative concrete. With spring and fall 2019 editions of *Concrete Decor* (Canada) now planned, show attendees and prospects will soon find a magazine in their mailbox that's certain to change the way they look at concrete forever.

Show attendees were filled with questions about what was happening in our space. Their intrigue toward the products, our demonstrations on

concrete and nonconcrete surfaces kept audiences returning throughout the three-day event. Truthfully speaking, the show went by too fast, but I think we did a good job of whetting appetites and pointing audiences in the direction of participating exhibitors who could answer more specific types of questions concerning existing projects.

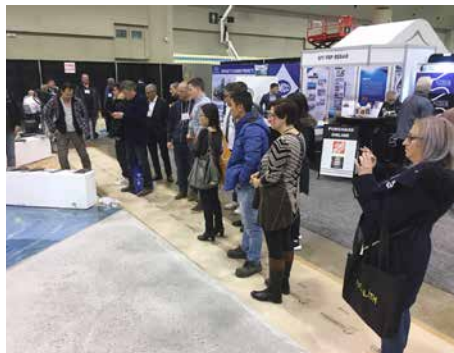
The show draws a strong attendance of property management groups, architects, designers and builders who need information to make more informed decisions on a wide range of building projects. With well in excess

of 12,000 attendees, Concrete Decor LIVE! was a welcome addition to the show, despite the short time we had to prepare for this debut event.

Based on positive feedback from attendees and exhibitors at the event, we're now planning our return to Toronto Dec. 4-6, 2019. To learn more about ways your expertise or products can become part of this event, please call *Concrete Decor* at (877) 935-8906. 📞



Photo courtesy of Informa



Photos by Concrete Decor staff

SDS hammers offer cordless, corded versatility

Dewalt has a new line of large SDS Max hammers in 1 7/8- and 2-inch combination and demolition hammers.

The Flexvolt 1 7/8-inch SDS MAX Combination Hammer, with its durable and hard-hitting German engineered mechanism, delivers category-leading 13.3 Joules of impact energy. Constant speed electronics allow the tool to maintain speed under load, even in the hardest concrete, while the patented E-Clutch system protects the user in bind-up situations by stopping the rotation of the bit.



This tool is ideally suited for horizontal and downward drilling for #5 - #9 rebar applications, core drilling up to 5 inches and chipping in any mid-to-lower wall and floor applications. Active Vibration Control technology also reduces vibration felt by the user for less fatigue and greater productivity.

This tool comes Tag Ready, so users and companies can attach the Dewalt Tag and track its location virtually anywhere via a tool connect app.

www.dewalt.com

Floor coating offers extended working time

Laticrete, a leading manufacturer of construction solutions, recently launched Spartacote™ Flex XPL, a high-solids, low-VOC and minimal-odor resinous floor coating for both decorative and protective applications. Designed to be easier to work with than similar products, Flex XPL allows contractors an extended working time of 20 to 25 minutes and a better flow, thanks to the product's chemical makeup which retains low viscosity.

With its high chemical and abrasion resistance, along with its compatibility with Spartacote's polyaspartic and metallic pigments and UV resistance, this floor coating can withstand harsh conditions while sporting a vibrant color.

Flex XPL features an improved setting time which allows for a fast return-to-service with foot traffic permitted in three to four hours and vehicular traffic after 24 hours. Additionally, it can be used within resinous floor coating systems as a primer, mid-coat or clear top-coat sealer. It's nonhazing for thick-build coating systems.

Ideal for a variety of applications, such as residential garages, commercial and industrial flooring and other high-traffic interior and exterior applications, Flex XPL meets the FDA/CFSAN, U.S. Food Code, physical facilities criteria as outlined in 6.101.11 of Surface Characteristics that are USDA acceptable.

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Bench is a 4-in-1 unit

Need a scaffold to reach up to 12-feet high that can handle up to 1,100 pounds? How about a safe, secure storage unit for the garage or a utility cart to move tools and materials from your truck to the job site? What about a workbench on wheels that can easily be turned into a miter saw bench with rails? What if you could get all this in one fell purchase? You can with the new Metaltech ScaffoldBench.



The only product of its kind on the market today, the bench is an innovative multiple-purpose four-in-one unit with many uses. It's a 6-foot scaffold, a garage storage unit, a utility cart and a mobile workbench with miter saw stand all rolled into one.



With no-tool assembly, the multipurpose ScaffoldBench can be used as a traditional Baker scaffold with a 1,100-pound capacity. Allowing 10 percent more weight than traditional Bakers, it can support two workers standing on it loaded with tools and materials.

When standing on the deck, you can reach up to 12 feet. If

you need to reach higher areas, it can be stacked up to three levels high for a 24-foot-high reach. It also features easy-to-adjust spring-loaded locking pins, so you can change the height as needed every two inches from 27 inches up to 73 inches. Heavy-duty casters are also included to move it around and the plywood platform is reinforced with steel construction.

The unit can be used as a storage shelving unit with wheels. It includes one storage shelf. Additional shelving can be bought separately. It also can be used as a cart to haul heavy, bulky items.

Finally, the unit can serve as a mobile workbench/saw bench. Designed with a reversible platform, one side is a deck/table while the other side is a saw bench with rails that will hold a miter saw or table saw. Work supports can be repositioned quickly anywhere along the rail.

www.metaltech.co



Green laser level provides vivid visibility

Kapro Tools recently introduced its 873G Prolaser Vector Green Laser Level.

The 873G comprises a green beam with a wavelength that's more easily detected by the human eye than a red beam. Using a detector, the beam can be seen up to 200 feet away. It is accurate to .0002 inch, which adds up to less than 1/4 inch per 100 feet.

The laser's features include three laser beams, including one horizontal and two vertical beams with 90-degree intersections; a self-leveling range of ±3 degrees; a manual mode for angular layout/tilted marking; a visual and audible "out of level" warning and tripod accessibility with 1/4-inch thread.

Kapro's patented adjustable folding legs, for angle mounting, provide higher stability and make it possible to use the level

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GranQuartz Acquires Regent Stone Products

GranQuartz, one of the leading suppliers of tools and equipment to concrete professionals and stone fabricators across the U.S., has acquired Regent Stone Products.

A well-respected industry innovator, Virginia Beach, Virginia-based Regent Stone Products has distributed stone fabrication and restoration tools and supplies since 1992.

With this acquisition, GranQuartz now has 55 reps and 14 distribution centers strategically placed across the country.

www.granquartz.com

without a tripod. When folded, combined with its shock-resistant rubber casing, the legs create a protective frame.

The 873G was awarded the Pro Tool Innovation 2018 Award in the "Line Laser Levels" category as a best-in-class product.

www.kapro.com

3-D tool lets users see photo-accurate results

Visualization software can enhance the user experience, change the way suppliers merchandise their products and expand the user audience. Chameleon Power, a visualization software leader in virtual and augmented reality platforms, has launched next generation visualization technology that enhances outdoor design.

Based on proprietary Chameleon technology, the 3D Repro Tool with MultiView capabilities combines photorealism with a powerful 3-D visualizer to help landscape and hardscape designers through the design process. The MultiView feature creates a panoramic view within a series of photos. The user can view design ideas from the angle at which each photo was taken and determine if potential purchases will fit in the design space.

The tool promises to speed up sales conversions by allowing customers to completely design, manipulate and experience design choices in a life-like digital environment.

To see the 3D Repro with MultiView Tool in action, visit https://www.youtube.com/watch?v=Q4Zd8yy_3Nk.

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Be ~~the~~ Your Best

by Greg Iannone

WITH the World of Concrete in full swing, manufacturers and distributors are showcasing lots of new gadgets, gizmos and products promising to make you more successful, more innovative, more ... well, you get the picture, right? This time of year can be both exciting and stressful at the same time. We are always looking for ways to “get a leg up” on the competition — to improve, to be the best. But what does being the best even mean?

Several years ago in the Southwest, a colleague and I were providing a “hands-on” decorative concrete training seminar which could be classified as Decorative Concrete 101. The training was extremely well attended, the participation level was high, and the questions asked and the discussions that ensued were both interesting and enlightening. In the days and weeks that immediately followed, we noticed an uptick in sales of the products demonstrated. It was a successful training on all accounts.

Oftentimes, when providing a training like this, we’ll pass out a brief

survey to better understand what went well, what could be improved or what the local contractors are looking for in a future training seminar.

While an overwhelming majority came back with great feedback as to the quality of the training they received, there was a large number who asked for “advanced” training — kind of a Decorative Concrete 404. The local distributor was completely onboard with “advanced” decorative concrete training, believing it would mean an even larger increase in sales the following time around.

I must admit, we were excited to come back and provide a very exciting training seminar, a seminar where we would “pull out all the stops” and show what is truly possible with decorative concrete.

Little things are important

The following year, true to our word, we returned with a great Advanced Decorative Concrete seminar. It was a seminar that — for lack of a better description — was on steroids. We literally and figuratively went “all in.” We used every type of advanced technique or process one could even begin to imagine and then some.

Again, the event was well attended. There were plenty of “oohs and ahhs” from attendees, as well as great dialogue, great insights and lots of questions.

What we realized afterwards through our normal follow-up was that while those who attended felt like they learned something, it didn’t translate to more work for them or more product sold by the distributor. It didn’t move the proverbial needle.

When we pulled the string back and investigated a little further, we discovered what we already intuitively knew: You don’t need to make a “big splash” or be “over the top” to be successful. You just need to do the little things well. In other words, be yourself — but be your best self.



Gray concrete finished with a half-fan technique can be impressive.

Photos courtesy of Greg Iannone

Don’t try to be someone you’re not

So, what do I mean when I say, ‘be your best self’? It means just what it sounds like. Be the best version of you. Don’t try to be something or someone you’re not.

In decorative concrete terms it means providing your customers with the best finished product on every project. For example, don’t try to provide advanced decorative concreting techniques (i.e., multicolored acid-stained mosaics or European Fan stamp patterns) until you have mastered single-color staining or seamless texture skins in stamping. Remember the saying, decorative concrete done well is free advertising while decorative concrete done poorly is a black mark on the industry.

Some of the most beautiful decorative concrete I’ve ever seen isn’t, in some circles, considered decorative concrete at all because it had neither color nor stamp texture. It is simply gray concrete, done exceptionally well.

Gray concrete broom-finished at right angles or broomed and picture framed with shiners can be decorative.



A well-positioned and executed stencil can easily add an eye-catching touch to a project.



So can gray concrete finished with a half-fan technique. Done well, it is impressive.

Surface deactivated concrete, whether colored or not, can be both aesthetically pleasing and functional in use. Some of the best stamp-work I've ever seen is a simple seamless slate or granite texture with saw cuts that provide symmetry and style. Nothing really advanced about it — just concrete done well.

Pay attention to details

Part of being your best self is paying attention to a project's details. First, as we have discussed in previous articles, is setting and then managing your client's expectations. This is crucial to any successful project.

Second, there are logistics. I'm referring to one's ability to handle the logistics of the project to ensure all product, supplies and tools necessary are on-site, easily accessible and accounted for.

Lastly, executing your plan and paying attention to the smallest detail on every project, whether it's logistical in nature or actual physical detail. This is what sets you apart. This is what makes you, you.

To be clear, I'm a huge fan of advanced techniques in decorative concrete. I love intricate stamp patterns with integral color and color hardener "flashed in" for a realistic effect. I love various stains and dyes used in conjunction with each other to give

depth and character. I'm pleased when decorative contractors look to grow and expand their offering by incorporating newly acquired skills.

What I am saying is: Do the things you're good at. Continue to learn new skills and perfect them through mock-ups before you use them on a real job. Crawl before you walk and walk before you run.

To be your best doesn't mean you have to always do the most difficult projects. It simply means you do your best work on every project.

Just be yourself ... but be your best self. 🖋️

Greg Iannone is area sales manager for Solomon Colors/Brickform. He has worked in the concrete construction industry for more than 30 years and has provided training seminars throughout the U.S. and Puerto Rico, as well as Mexico and Japan. He can be reached at (801) 376-6750, (909) 434-3274 or giannone@solomoncolors.com.

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ARTISAN IN CONCRETE



Keefe Duhon Concrete Revolution, New Iberia, Louisiana

by Chris Mayo

WHEN you speak with Keefe Duhon, one thing stands out: he's not timid about trying new things. Only 10 years ago, he was a machinist with a local manufacturing company in Louisiana. When he went on vacation he was taken by a decorative concrete floor in a restaurant and decided he wanted to try something like that himself.

"This floor was stamped and stained to represent wood planks," Duhon recalls. "For the rest of my vacation I couldn't stop thinking about it. When I got home, I ordered some products, watched training videos and started playing with concrete in my backyard."

When he finally produced something he was pleased with, he posted pictures on Facebook. Pretty soon, people were calling and requesting that he do some decorative work at their home or business. The only problem was that he still had a full-time job as a machinist.

"It wasn't long before I was working an incredible number of hours trying



to manage both jobs. I wanted to quit the machining and go into concrete full time, but my wife and I had a baby on the way, and the machinist job provided insurance. My wife liked the security of a job with benefits, but I could see the potential in decorative concrete."

Another thing about Duhon: He had the intestinal fortitude to quit the machinist job without telling his wife. Naturally, she figured it out and caught him (oh, to be a fly on the wall), but she ultimately supported his decision and Concrete Revolution LLC was born.

Now, a decade later, Duhon is owner/president of three separate companies based in New Iberia, Louisiana: Concrete Revolution, Maverick Surface Preparations and Behind the Trowels. All three companies came about because Duhon recognized a need and decided to do something about it.

Concrete Revolution

From humble beginnings, Concrete Revolution has grown into a nationally recognized decorative concrete company. Duhon recalls how social media made a big difference.

"One thing I realized early on is that if I didn't keep on learning new techniques and innovating, the



Photos courtesy of Keefe Duhon

company would probably do okay, but not great. I wanted to take it beyond that,” Duhon says.

“I was posting a lot of pictures of my work on Facebook and had about 5,000 followers. Then I did a wood plank floor and a faux water finish. Those pictures took off. They kind of went viral. I went from 5,000 followers to about 75,000 within a couple of weeks. Plus I started getting calls for higher-end jobs and started meeting other top people in the industry.”

Concrete Revolution now offers a wide scope of specialty decorative concrete options to commercial and residential customers including microtopping, polishing, stamped concrete, stains and epoxy finishes. It’s

become the definition of a full-service decorative concrete provider, offering everything from floors and vertical concrete to fireplaces, mantels and countertops.

Maverick Surface Preparations

As Concrete Revolution grew, in both reputation and the concrete options it offered, requests to teach others was becoming a growing part of his business.

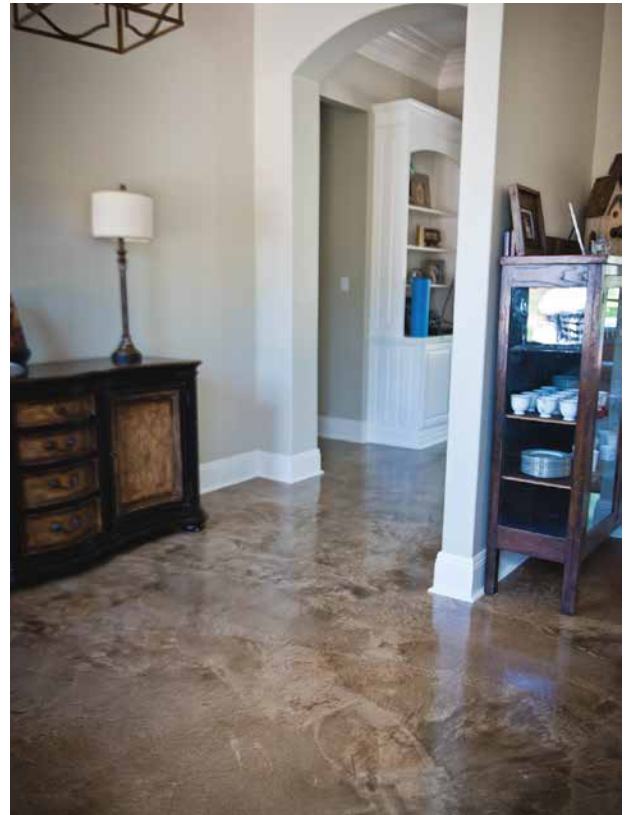
“I was constantly being asked to facilitate classes on how certain aspects of decorative work are done right and to be on panels,” he says, such as the ones he participated in during the 2017 Concrete Decor Show in Florida.

“One thing I always stressed at the

beginning of training sessions is the importance of surface preparation. It’s the foundation of everything else, no matter what kind of application you’re doing. It’s really hard to fix poor preparation after the fact, Not spending the time to properly prepare a surface will cost a contractor in the end.”

His reputation grew, and he was soon facilitating large trainings (60 or more attendees) in sessions at World of Concrete and for the Concrete Decor RoadShow. At the inaugural Decorative Concrete LIVE! at WOC in 2017, he was among the artisans demonstrating his talents and sharing his knowledge throughout the show.

“People asked me all the time to recommend equipment. They wanted to



know what grinders or polishers I used, and why I used them.”

Eventually he decided to design his own brand of grinders. He reasoned that he knew exactly what he wanted in a grinder and was confident he could design tools that would be popular in the market. He tapped on his machining and design skills, worked with a designer and came up with drawings for the grinder he wanted to manufacture.

They built a prototype, he liked it, and he started Maverick Surface Preparations. From one grinder the company has grown into an operation that sells a variety of grinders for both large commercial jobs and smaller

residential ones. He has distributors throughout the United States.

Behind the Trowels

A few years ago, Duhon noticed that attendance for trainings was shrinking — not just his trainings, but all trainings. He talked to others within the industry and concluded that attendance is down because people are simply busier now. Maybe it’s because the economy has improved and the building industry is doing better, or maybe there are other reasons.

“I thought if people are too busy to come to us, why not go with them? My wife is a hairdresser and she is

constantly watching techniques and getting ideas through online videos. Why wouldn’t that work in the decorative concrete industry, too?”

Duhon teamed up with Bob Harris, president of the Decorative Concrete Institute and known worldwide as a trainer for seasoned veterans as well as newcomers to the decorative concrete industry. Together they created Behind the Trowels.

Behind the Trowels is an online training site that anyone interested in either learning about or learning more about decorative techniques can access. He says he offers the training at a reasonable price.



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Always be learning

Duhon says the key principle he brings to his businesses is to “always be learning.”

“I used to be bothered if I made a mistake,” he says. “Now I embrace everything as an opportunity to learn more.”

Duhon also learns from other artisans. A great example is the grotto he’s been creating at his home pool. He’s teamed up with several leaders in the industry and together they’ve

put more than 350 hours into the project. Kingdom Products, a supplier of concrete materials, donated all the products for the job.

“The grotto has every feature we could think of: big screen televisions, LED lighting, a fire pit, tanning area and a stream running through a pool on top that empties into the pool below. The really cool thing about it is that all these people that are truly artists with concrete have all had a hand in it, and you can see the individual touches everywhere,” he says.

It’s not surprising that Duhon’s work has garnered plenty of awards. A few include first place in the 2015

Concrete Decor Show’s Brawl in the Fall competition for a swamp scene that has been nationally recognized in several magazines, second place in the 2016 Concrete Decor Show’s Brawl in the Fall for a display he created to raise awareness of human trafficking, and first place in a World of Concrete’s Experts Choice Award for a blue moon carving that he collaborated on with Troy Lemon and others.

Take it from Duhon: Keep on learning — it’s a good principle for any business. 🖋️

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Photos courtesy of Todd Rose

Seen here are samples of concrete with a portland cement content that have been color loaded in the mobile mixer. The sample on the far right has no color. The others are colored with the same colorant at a load rate starting at 1 percent and incrementally increasing to 4 percent. Only about a wheelbarrow's amount of concrete is mixed at a time, allowing the provider to precisely control the color from one yard to the next.

Mobile Mixers Put Decorative Concrete Contractors in Control

by Todd Rose

MOBILE mixers, sometimes called volumetric mixers or metered concrete, offer a variety of benefits to decorative concrete contractors, including only paying for what is used, eliminating hot loads, readily allowing mix design changes on-site, labor savings, admixture additions and color batching.

Only pay for what's used

Using a metered concrete truck allows decorative concrete contractors to save money because they only pay for what's used compared to what's ordered. And that can add up considering the average price of a yard is about \$150 depending on the color.

Many contractors order an extra yard of colored concrete for each job because there are not too many things worse than being short when placing colored concrete. Over a year, that total can be considerable. According to Jeff Bishop of Pleasure Pools in Nashville, Tennessee, he has saved around \$15,000 per year by switching to mobile mixers because he doesn't have to pay for extra concrete to cover pours.

No hot loads

Since concrete from a mobile mixer is mixed on-site, there's no concern of hot loads from either traffic delays, wrong directions, miscommunication or other issues. When a ready-mix truck arrives an hour or so late, how many times have we asked ourselves, "Wonder how long that's been cooking?"

Flexible mix designs

Changing your mix with a mobile mixer is as easy as turning a switch or control dial. Gone are the days of "what you got is what you get." Simply put, pouring colored concrete with a mobile mixer or volumetric mixer gives the decorative concrete contractor more control.

Take Josh Cunningham, owner of C4 Concrete Designs out of Edmond, Oklahoma, for instance. In 2017, he realized this flexibility with mix designs while conducting a stamped concrete demo.

"We had the stamps picked out for this demo and all of a sudden the students wanted a really deep textured stamp to be shown," he says. "I simply

asked the driver (who is also the batch man) to back off the large aggregate by 20 percent." He said it was no problem.

"Using that deep of a texture with a lot of big rock could have led to tearing my surface," Cunningham says. The problem was avoided because the aggregate content was easily altered on-site.

Labor savings

In today's skilled labor-starved environment, smart contractors are learning and adapting to doing things differently. With mobile mixers, companies are placing more concrete with less workers.

I must admit the first time I saw two guys pouring out 1,100 square feet of colored concrete from a mobile mixer to be stamped it seemed to break every "rule" of pouring I was ever taught. Those two guys did a wonderful job, and after two decades in decorative concrete I was learning a very different and perhaps a better way to place and stamp concrete.

Nathan McDaniel out of Bowling Green, Kentucky, owns and operates

McDaniel Concrete, a two-man company that exclusively uses mobile mixers. He contends that since mobile mixers only batch on-site seconds before placement, he can control or step-retard his pours with less labor.

"If I'm pouring, say, 800 square feet of colored concrete to be stamped, I'll often pour out a third and take a small 10- to 15-minute break," he says, pointing out it's only a two-man crew doing the job. "I'll place the second third and take another break and maybe even wet the subgrade on the last third. Then I'll go back to bull float what I've already poured before placing the rest."

This method allows him to control the set and place more with just a two-man crew. "Now that color is controllable and predictable with mobile mixers, I can charge more and get better margins," he says. "And I don't have to play 'the please come to work today' game that comes along with multiple employees."

Admixtures

Today's mobile mixers are a virtual batch plant on wheels. Admixtures, whether plasticizers (water reducers), chloride accelerators, fibers or non-chloride accelerators, are on the truck and can be used on-site depending on the situation.

This flexibility gives the decorative concrete contractor more control.

Color matching

Bulldog Concrete out of Poughquag, New York, recently added a color machine to one of its mobile mixer trucks. Bulldog's owner, Rich Colesanti, says he's seeing an increase in the demand for colored concrete from his decorative customers because many more are confident that mobile mixers can deliver precise color matching whether it's 1 yard or 15.

Dennis Cooper from Valley Ridge Concrete in Franklin, Kentucky, adds that there's more precision with colored concrete today because advances have been made in mobile mixers' color delivery systems. In particular, he notes, today's machines allow color to be precisely controlled as concrete is mixed.

With a normal tumbler ready-mix truck, a certain amount of color must be spent coating the drum. So when you



A crew member places colored concrete from a mobile mixer during a training demonstration.

order 3 yards versus 9 yards, a greater percentage of the color goes to coating the drum, he says. This can easily lead to color discrepancies.

Cooper explains with a mobile mixer, only about a wheelbarrow's amount of concrete is mixed at a time and you can precisely control the color from 1 yard to however many yards. This control of color is crucial to the success of a decorative concrete contractor.

Future outlook

According to Jerry Stoner, president of Zimmerman Industries, a driving force within the mobile concrete industry that's headquartered in Ephrata, Pennsylvania, the future for mobile mixers looks pretty rosy.

"About 75 percent of Zimmerman's new truck sales are going to concrete contractors to provide their own concrete," he says. "Labor shortages, flexibility, control and the ability to deliver their own colored concrete is why many decorative concrete contractors can benefit from pouring colored concrete with mobile mixers." 🛠️

Todd Rose, co-owner of VRC Color Systems and plainconcretesucks.com, has more than 22 years of experience in the decorative concrete industry and has won numerous first-place awards from the Decorative Concrete Council. Todd can be reached at (615) 955-1121 or info@vrccolorsystems.com.

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The image shows a teal and black cordless mixer with a mixing attachment. The background is dark with glowing blue lightning bolts. The text "Xo 10^{NC}" is in red and white at the top. Below it, "New Collomix Cordless Mixer" is in white. At the bottom, "18 volts power block" is in white.

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Channeling CRACKS

Well-placed joints make a world of difference

When cutting joints, the best spacing is square. If cutting rectangles, the proper ratio is no more than 1.5:1.

Photo courtesy of Osterhaven Concrete

by K. Schipper

WHEN it comes to concrete — as with so many other things in life — people tend to judge a book by its cover. There's nothing like a giant crack or a crumbling corner in a recent concrete placement to make an unhappy customer.

It's not the concrete's fault. Its very nature is going to guarantee that as the water in the mix evaporates and as the concrete cures it's going to shrink, and clients need to be educated about that upfront.

Good contractors also know that the proper placement of joints in new concrete can make a world of difference in channeling cracks to where they won't show, meaning downward and out of sight.

Command performance

Sadly, it doesn't take much to find examples of poorly jointed concrete.

Is that big crack in the supermarket aisle because the 16-by-16-foot slabs are too large or not properly isolated? Who thought a single center joint would do for a 25-by-40-foot patio?

At its simplest, placing joints is just

that: Simple. The American Concrete Institute (ACI) sets standards for their installation. While a construction joint (the point where different placements meet) should encompass the entire depth of the slab, the depth of a contraction joint should be one-quarter the depth of the slab, whether tooled or saw-cut.

Other important things to remember:

- Spacing should be square, and in feet no more than two-to-three times the slab thickness in inches. For example, a 4-inch slab should have joints spaced no more than 8 feet to 12 feet on center.
- If not square, keep the ratio at less than 1.5:1 (for example, 12-by-8 feet).
- Never create a space of more than 225 feet² (15-by-15 feet) without jointing.
- Always install joints with straight lines, never staggered.

Whether they're construction or control (also called contraction) joints, the importance of joints can't be stressed enough. Tom Ralston,

president of Ralston Concrete in Santa Cruz, California, says joints help the concrete perform.

"They become the weakened plane of the surface, and as the concrete cures, it not only wants to shrink, but it also curls on the edges," he explains. "The joints help the cracking when it will occur, and it usually starts at the top because concrete dries out more quickly at the surface than at the bottom.

"By weakening the plane at the joint, it allows the concrete to crack into that joint," Ralston adds. "That's why they're called control joints, because they're controlling — or at least trying to control — where the cracking is going to happen."

They're certainly important enough that it pays contractors to plan them out in advance. Fairfield, California-based concrete contractor Lee Levig admits he may go overboard on his approach but, being a CAD (computer-aided design) enthusiast, he diagrams his joints ahead of time.

"It depends on how complicated a job is, and what they want," he says.

“I lay out ‘mandatories’ such as inside corners where I know it’s going to crack and where I know I’m supposed to cut a joint. Once I lay out the mandatory joints, I try to create a pattern where they’ll look aesthetically pleasing.”

Even if the job is a little larger, says Lance Boyer, president of Trademark Concrete Systems Inc. in Anaheim, California, good planning helps.

“Fortunately, I think landscape architects and architects in Southern California have a good working knowledge of joints,” Boyer says. “But, projects can vary in complexity, so we use shop drawings to make suggestions. It’s a way to communicate and get joint layout clarified before we start the project.”

Strong ... and good looking

Although well-placed contraction joints can make or break a nice, flat concrete placement both literally and figuratively, paying attention to construction joints also contributes to a great-looking project.

Concrete placements against existing walls, vertical restraints and architectural features, or around columns can all benefit from isolation, or expansion, joints. There are several different options to do them.

Ralston, for instance, uses a commercially available strip foam product.

“When the concrete shrinks around whatever it’s touching, it has some give,” he says about the strip foam. “On an interior floor, for instance, against the walls you can probably put a baseboard over it and never see it. It has a little breakaway strip at the top that pulls off and you can also fill that with elastomeric caulking.”

“You’re just creating a barrier between the new and the existing concrete,” says Steve Chmelar, vice president of commercial sales for Carroll Construction Supply in Ottumwa, Iowa. “Some people I know just use a waterproofing tar or waterproofing membrane they brush on the concrete before the second pour.”

The main idea, regardless of what’s being used, is to create a bond-break between the two expanses so they move independently of each other where a construction joint is implemented.



Photo courtesy of Sijp Industries

Groovers come in a variety of lengths, such as the Torpedo Groover that’s available as small as 24 inches and as large as 56. The innovative tool was designed for finishers who wanted a handled groover they could push across the slab instead of having to work on their hands and knees.

Certain architectural features and isolated columns also can play a role in the placement of control joints. The reason, says Chmelar, is the concrete has changed direction, and so control joints are a must, as well.

“Concrete looks for a weak place to begin its cracking,” he says. “For instance, if you have a corner that points inward into a structure, or if you have multiple corners, then it’s not equally loaded from side to side and end to end.” In these scenarios, you must divide the concrete into square units and provide a method for its breaking otherwise cracks will take off from a corner.

While control joints are critical to many smaller jobs’ success, load transfer devices may be needed for larger projects involving multiple placements — particularly where something beyond foot traffic is expected — to keep

construction joints from curling and to decrease damage to them later.

Keyed joints, basically forms that notch the edge of a concrete placement, provide another option. Today, there are many different types of keyed joints, including some that allow for dowels that bridge the gap between slabs and assist in load transfer. Generally, dowels have replaced keyed joints for many contractors, including Brian Osterhaven, owner of Osterhaven Concrete in Caledonia, Michigan, as these joints tend to crack.

“Whenever we have a break between pours on residential jobs, we use a #4 smooth dowel,” in one of two ways, he says. “Sometimes we drill holes in our form board and grease them and put them in. Other times, we drill them in after the fact.” He adds that he prefers smooth dowels because they expand and contract quite a bit.

For best results, plan ahead

by K. Schipper

Joints — both construction and control — are parts of almost every concrete project. Whether the job is a stained patio or a stamped sidewalk, good planning and a little extra care can help create a finished surface that's both attractive and properly jointed.

Concrete contractor Lee Levig says the important thing is to lay out your joint pattern before you begin. He prefers working in CAD (computer-aided design).

"When I lay out my drawing, I start with all the mandatory joints, inside corners and anything protruding through the slab," he says. "Concrete always likes to have a balance, and you have to think about that. You also want to cut your joints square."

When possible, Levig adds that he tries to incorporate the joints into the design, and if a client wants tooled joints, he'll cut and deepen what he would normally put in.

Brian Osterhaven, owner of Osterhaven Concrete, says there's another important reason to plan ahead.

"If you have a patio that has a sidewalk coming off each side, you want to make sure you lay it out so when you go off those inside corners they're going to line up and be square with everything else," he says. "You don't want to have a line that's crooked with the house."

Like Levig, he says clients often want to have input, as well.

"People just have preferences on what they like for looks," Osterhaven says. "For instance, with decorative concrete, people will want a tooled control joint."

Tom Ralston of Ralston Concrete also frequently works in the hardscape market, and he says he has one go-to grid pattern that works on a lot of different expanses.

"We have patios that are meandering or serpentine, and one of the ways we've found to put in deep joints there is to do a diagonal pattern," Ralston says. "It looks great, very aesthetic and very clean."

There is one drawback, however. If the look is more diamond-shaped rather than 90-degree angles, the control



Especially for decorative jobs where the placement of the joints will be part of the decoration, it pays to plan ahead. For this job, the first step was coming up with an idea, then spray-painting it on the site to give the owner a preview. By placing the joints on the diagonal, the contractor adds interest to the area without giving up any of their crack-controlling abilities.

joints aren't quite as effective in preventing cracking.

When it comes to stamping or texturing, there's some disagreement on the best approach for handling joints. Jim Bowie, a senior product manager with supplier Marshalltown Co., advises placing the stamp or mat up to the joint but not over it.

"There's no way to go back and retouch it," he says. "There's usually a powdered or liquid release that's on the surface of the slab, and if you run the groover back across the groove with the release agent on it, it will discolor the concrete."

Osterhaven agrees — to a point. He says it depends on the stamp or mat.

"If we're doing a stone pattern, we stamp up to the joint," he says. "But, if we're doing a seamless texture stamp, we run the stamps over the joints, taking care not to squish them."

The bottom line: while Levig says there are times when he tries to minimize the look of control joints in his decorative work, it's also important to manage the expectations of the client.

"At the end of the day, it's just concrete," he concludes. "I can make it look prettier, but I can't change its properties. A lot of people tend to oversell, and the customer is expecting things that just don't happen."

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The side of the house lends itself to a parallel/perpendicular configuration.



The crew uses chisels and a 2-by-4 as a straight edge to make an initial cut.



Parallel and perpendicular colored bands interface with diagonal deep joints in the panels.

Photos courtesy of Tom Ralston Concrete



Photo courtesy of Marshalltown



Photo courtesy of Carroll Supply

Hand-held groovers are probably the simplest tools to use to form a joint in a project such as a sidewalk that's installed and finished on the same day.

"We put in dowels, whether they're specified or not," says Trademark's Boyer. "We typically use a 5/8-inch steel diamond or smooth bar. Typically, we place them about 24 inches on center. A product called Speed Dowel has become our go-to product."

And, of course, Boyer adds, if the job specifies something else, such as diamond-shaped load plates or load transfer plates, the engineer's specifications are met.

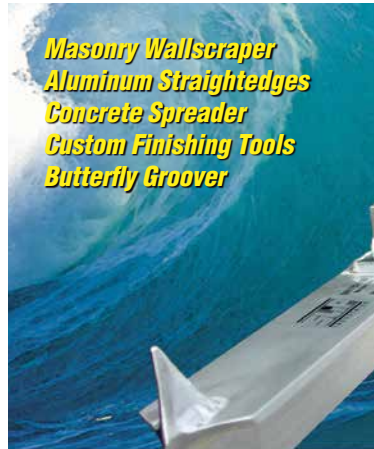
No one best answer

Just as there's no one best answer for handling load transfers, there's also no single answer for how and when to install control joints.

Probably the simplest — and certainly the one that's easiest to complete as part of the same-day finishing process — is using a grooving tool, aptly called a groover.



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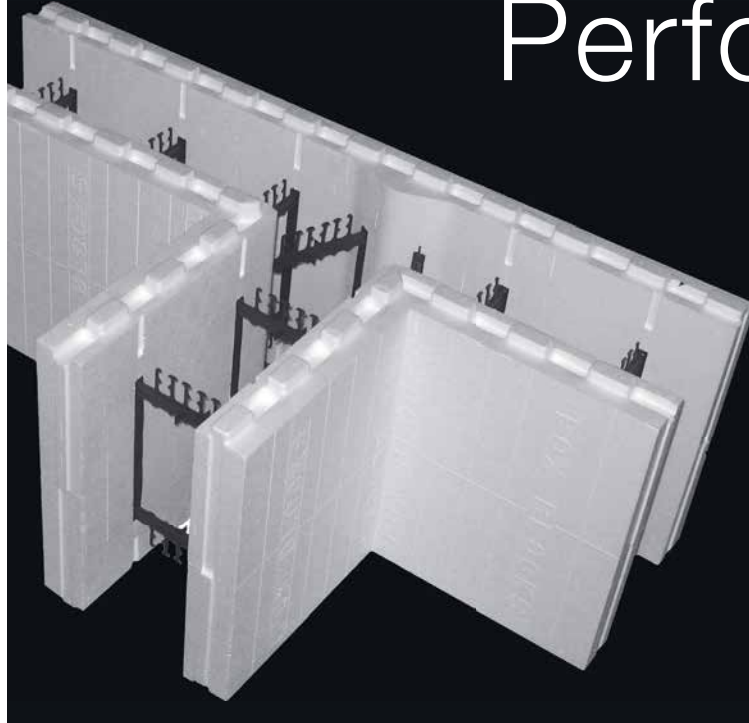
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Osterhaven says he uses a groover on a lot of smaller jobs like sidewalks and patios.

“We have one that’s 4-foot and one that’s 2-foot,” he says. “They can cut 1 5/8-inches deep, which is just thick enough to work on 6-inch concrete, but I like them for 4-inch concrete. I follow the theory that a little (too) deep is better than not being deep enough.”

Charyl Dommell of Slip Industries in Manheim, Pennsylvania, a company that manufactures the Torpedo Groover, says their advantage is that you can put in your control joint almost immediately.

“All the groover is doing is displacing the aggregate,” she says. “It’s pushing the stones into a straight line on either side of the groove so when it cracks, it cracks down.”

Ralston, who prefers to set his joints early in the process, has developed his own method that allows him to mimic a saw-cut joint.

“Our Saw-Cut Joint Tool is just a smidge wider than a saw-cut,” he says. “We chisel out an inch deep, and then come back with the tool, which has nice, crisp, rounded edges, rather than the square edges of a saw. It also compresses the concrete very densely so there’s not much cause for it to fray or crack.”



Photo courtesy of Pacific Palette

The following day, his crew returns to score the joint to the needed depth with a diamond blade.

The other option is to saw-cut the control joints after the concrete has cured enough to support the weight of a saw — typically the following day.

“The argument against an early saw-cut with traditional saws is that it tends to ravel the aggregate and cause a really irregular joint, not the nice 1/8-inch or 1/4-inch cut,” says Carroll’s Chmelar. “However, in the late 1980s, Husqvarna came up with the Soff-Cut saw, which

is lighter in weight and has a faceplate that holds the aggregate down.”

As with a groover, it offers the option of installing the control joints the same day the concrete is placed. Still, many contractors, such as Trademark’s Boyer, opt to return the next day and saw-cut their joints then.

“We typically do sand finishes using top surface retarder, and it works better, in my opinion, with the saw-cut joints,” he says. “We also typically cut dry and use an OSHA-compliant HEPA vacuum to control the dust.”

In addition, Boyer strongly suggests purchasing ACI’s “Placing and Finishing Decorative Concrete Flatwork CCS-5(16).” “It has a very good chapter on forming, reinforcement, dowels and jointing,” he says.

Regardless of which joints you’re installing and the methods you’re using, Levig offers this advice. Learn to manage your customers’ expectations and continue studying concrete by taking advantage of classes offered through ACI, the World of Concrete and the upcoming Concrete Decor Show in the fall in Texas.

“I’ve also taken classes in civil engineering at the local community college,” he says. “I continue to educate myself.”

- www.carrollsupply.com
- www.osterhavenconcrete.com
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- www.tomralstonconcrete.com
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Discover the Power of Concrete at 2019 Decorative Concrete LIVE!

2019 Decorative Concrete LIVE! at the World of Concrete in Las Vegas offers up a power-packed mix of the latest technologies in products, tools and equipment for concrete enthusiasts. The challenge each year is to meld products from every aspect of the concrete industry into our working exhibit. In addition, we want to demonstrate the many ways concrete adds sustainability and energy efficiency to building projects.

During the show, stop by our exhibit located in the Silver Lot in front of the South Hall and talk with our experts. Watch as materials are applied or grab some gloves and give our sponsored products a test-drive. Best of all, Decorative Concrete LIVE! is a place to meet new people and connect with old friends while building yourself a network of associates you can lean on throughout the year.

It's all brought to you by people that know this industry best, namely *Concrete Decor* and the companies we have teamed up with to bring you Decorative Concrete LIVE! We look forward to seeing you there!

Artisans at work

Here's the list of concrete artisans who will be demonstrating their techniques while working with a wide variety of products and systems:


- **Emil Gera** of Gera Concrete and **Troy Lemon** of Cornerstone Decorative Concrete will showcase the use of Viper II moisture barrier products and Elite Plastiform products for slab-on-grade and radius concrete walkway applications.
- **Ben Wiese** of Multiquip will be operating equipment to consolidate concrete and finish a slab with a power trowel. He'll also use an MQ Whiteman mixer for cast-in-place concrete wall caps made with Z Counterform decorative edge molds.
- **Ken Williams** of Legalett will install an air-heated radiant floor.



Photos by Concrete Decor staff

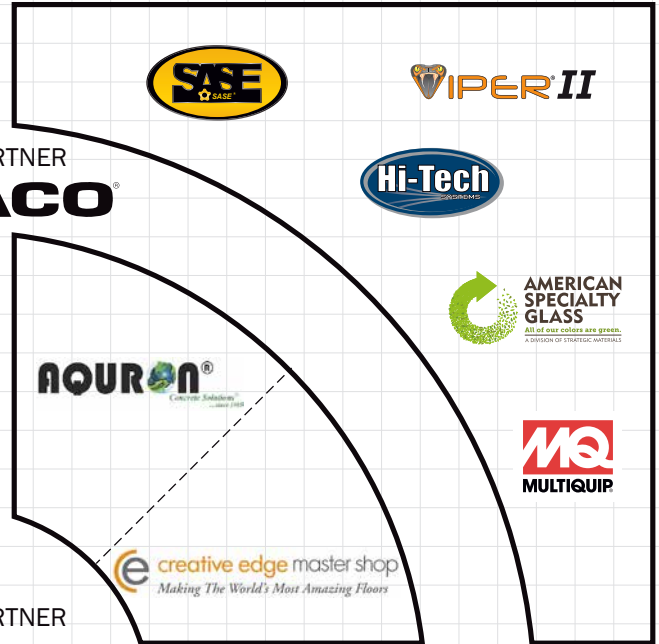
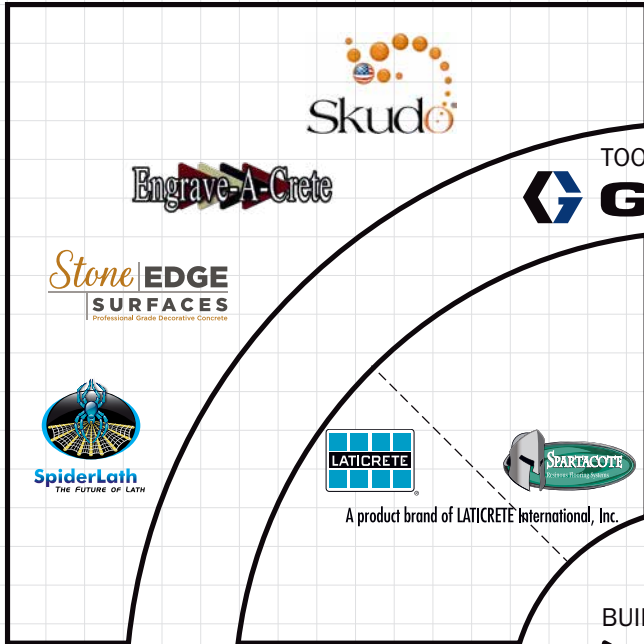


- **Scott Kummer** of Visions Below will use SASE polishing equipment and Aquaron products to densify and polish a concrete slab seeded with white marble.
- **Danny Carrillo** of Graco Inc. will demonstrate how to use Graco equipment to apply Quikrete lightweight stucco and Stone Edge Surfaces products.
- **Scott Kummer** will show how to use SASE equipment, GPec products and an aluminum water jet-cut stencil by Creative Edge Master Shop for an epoxy terrazzo application.
- **Shellie Rigsby-Cordell** of Acanthus Concrete Stain Designs will demonstrate how to apply concrete stains on concrete and overlay surfaces that are scored with the exclusive Engrave-A-Crete line of products.
- **Debbie Ohland** of Engrave-A-Crete will use Engrave-A-Crete scoring tools for designs in new and existing concrete surfaces.
- **Cindee Lundin** of The Studio by Cindee Lundin will showcase her extraordinary skills with vertical applications using Brickform products on Fox Blocks Insulated Concrete Form (ICF) walls.
- **Jeff Szalony** of BC Decorative will present an array of decorative concrete applications using Laticrete/HP Spartacote products.
- **Troy Lemon** will apply vertical carving products to Fox Blocks ICF walls for high-end commercial applications.
- **Emil Gera, Troy Lemon and Matt Sampson** of Matthew Buckley Sampson Inc. will show ways to stamp concrete walkways, with an emphasis on how accent colors can add distinguishing characteristics.
- **Marty O'Mara** of Nox-Crete will demonstrate how to enhance and protect the life of decorative concrete applications with Nox-Crete products.
- Representatives of Convergent Concrete Technology will install new ColorFast colors on polished concrete.
- ICP's **Ron Cope** and **Mark Haen** will apply Pli-Dek waterproofing systems to concrete and nonconcrete surfaces.
- **Mark Haen** will demonstrate the use of choice Arizona Polymer Flooring products.

If you have questions about products used during Decorative Concrete LIVE!, call (877) 935-8906 or email bent@protradepubinc.com. 

2019 Decorative Concrete LIVE! Project Plan

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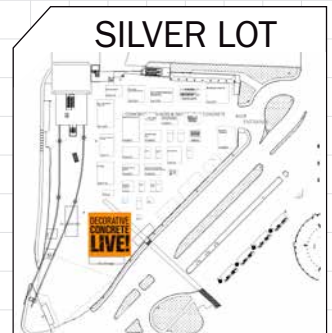


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This patio was grinded before an epoxy prime coat with Cohills Tahoe Blue was put down and top coated with 100 percent urethane. The urethane in this install, says installer Jon Kopp, was necessary. "Epoxy won't protect a surface from the sun's UV rays like a urethane does," he says.

For Durable Metallic Floors... Be Careful when Using 100 Percent Solids Urethane

by Jon Kopp

WHEN installing a metallic epoxy system, urethane can be detrimental to a project's outcome or a welcome addition to its success.

For the longest time my residential garage floors were a three-coat system. I'd start with a coat of epoxy for my primer and then I'd squeegee a 100 percent solids epoxy mixed with metallic pigment from wall to wall across the floor. I never had to worry about product getting into control joints or even large divots. The epoxy would just fill them in and self-level. I'd then apply a topcoat of polyurethane with ultra-violet ray (UVR) protection.

But in some cases, this topcoat didn't seem to be enough. I had jobs where the outer lip of the garage floors was still exposed to the elements when the door was closed, and that area had the potential to turn yellow. So for about a year, I changed my system to a prime coat of epoxy followed by a coat of metallic pigment mixed with 100 percent solids polyurea UVR. My floors were now 100 percent UVR-protected and I liked that.



Photos courtesy of Quality Epoxy LLC

This multihued walkway was achieved with Cohills Copper metallic mixed with epoxy and top-coated with 100 percent urethane. Kopp says there are between three and six different colors in each metallic recipe resulting in various shades because of the product's movement.



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Jon Kopp's garage at his house displays his metallic flooring handiwork in a combination of Blue Ice, Sterling and Quick Silver.

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Another advantage of using a polyurea UVR is that I didn't have to wait more than five to 10 minutes to apply whatever solvent I was using for effects.

However, after using this metallic pigment in polyurea method for a year, I discovered I had to contend with some issues. For starters, product that fell into the control joints blistered and ballooned because it was too thick.

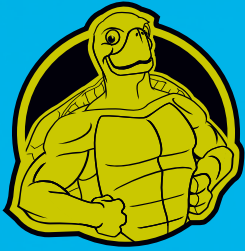
When using a 100 percent solids urethane, you must remain within its maximum mil thickness, which is usually around 16 mils. If you exceed the manufacturer's maximum suggested thickness on the floor, the product will dry soft.

Because I needed to max out the urethane's mil thickness to achieve that amazing metallic wow factor, I got outgassing from time to time depending on the outside heat index (which is almost always high where I live in Arizona). Outgassing is bad because the hot air rises to the surface and can create bubbles that burst, leaving a marred surface.

So I've come to conclude that when installing a multicolored metallic floor, it's best to use an epoxy prime coat, followed by 100 percent solids epoxy and top-coated with a polyurethane UVR. Take it from me, if you use the urethane UVR as a build coat, the results will be extremely disappointing and will just result in a do-over.

The only time I recommend using a 100 percent solids urethane UVR is when you're installing a single metallic color on a patio or anything outside. Instead of applying the metallic mixture with a squeegee, use a brush for the control joints and a roller for the floor. The mixture is thinner when you roll it on and thicker if it's squeegeed. 🛠️

Jon Kopp, who has been coating floors for more than 16 years, owns and operates Quality Epoxy LLC in Gilbert, Arizona. The company exclusively uses metallic powders from Cohills Building Specialties Inc., an Arizona-based company that recently began distributing Arizona Polymer Flooring epoxies and polymers. You can follow Kopp on social media at facebook.com/qualityepoxy or visit his website at www.qualityepoxy.com.



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Sealed with a Mist

Tyler Stephens, owner of Stephens Concrete Sealing in Indianapolis, says customer satisfaction has improved since his company switched from topical to penetrating sealers. “Every time it rains, my customers have a visual reminder that their concrete is sealed,” he says. This water-repelling attribute, he adds, has gotten him many referrals.

Photo courtesy of Stephens Concrete Sealing

Water-beading characteristics add to sealers’ broad appeal

by Stacey Enesey Klemenc

ACROSS the country, there’s a trend afoot when it comes to what people are seeking for their outdoor projects. “They want a natural look that delivers penetrating protection,” says Chris Sullivan, decorative concrete specialist for the American Society of Concrete Contractors and the vice president of sales and marketing for ChemSystems Inc. based in Houston, Texas.

“They’re moving away from what I call the ‘glazed doughnut’ look and moving toward more natural-looking sealers that don’t produce a film but do provide good protection,” he adds. “Some enhance the surface; some don’t. The main thing is there’s no gloss.”

The other area that’s growing in the sealer category is water-based products which typically have little to no odor or VOCs and aren’t a flammability hazard.

“And if regulations continue to tighten, I think we’ll see more development in water-based technology.”

The whole push for us to reduce our carbon footprint by offering more low-maintenance, environmentally friendly products is causing many manufacturers to step up their game — which many agree has been a good thing for the construction industry.

Demand is widespread

The areas of the country where more and more contractors are switching over to water-based sealers include California and states in the Northeast, says Rich Sanders, general manager for Clemons Concrete Coatings in Nashville, Tennessee. “They’re mainly doing this because they have to,” he says, “but also because they work well.”

Beyond the U.S. mainland, other areas are clamoring for water-based products, says Mark Hampston, CEO of Redi-Mix Colors, a company that specializes in stains and is a reseller of Ghostshield products. Business is going gangbusters in Hawaii due to that state’s strict low-VOC regulation, he says. “And we also just finished setting up distribution in Malaysia. The demand reaches well beyond the contiguous 48.”

The performance gap between solvent and water-based penetrating sealers is much smaller than it used to be, Sanders says, and changes are positive when switching over. “Water-based sealers are easier on the equipment and you just need plain water to clean up,” he notes. Plus, you can apply the product with very

economical plastic sprayers.

This ease of application makes them a go-to product for many, says Benjamin Moore, principal and CEO of Ghostshield in Hudson, New Hampshire. "Simply pour the sealer into a low-pressure pump sprayer and apply," he says. "You don't have to worry about lap lines, roller marks, over-application or the material flashing off too quickly."

In general when applying water-based penetrating sealers, Moore continues, apply two coats, applying the second coat while the first coat is still damp. "This application method increases the sealer's time of contact on the surface and ensures optimal permeation."

"The key to a good application is to apply the product to the saturation point but you don't want it to puddle," says Clemons' Sanders.

Penetrating sealers are very thin and readily soak in so it's hard to decipher how much you should use to achieve full coverage, says Chris Becker, director of technical services for Solomon Colors/Brickform based in Springfield, Illinois. He encourages contractors to become familiar with a chosen product's characteristics so they know when they have enough on.

"You need to understand what the product does and doesn't do," he says, and pass on this information to your customers.



Photo courtesy of Ghostshield

One of the alluring traits of penetrating water-based sealers is their ease of application. Simply pour the liquid into a low-pressure pump and spray the concrete surface you want to seal. When you're done, you clean up with water.

Common types

Penetrating water-based sealers are most commonly derived from silanes, a silane/siloxane blend or siliconates, says Ghostshield's Moore. The molecules in each function a little differently, he says. Silanes are very small molecules (0.3 to 1.5 nanometers) and work very well for concrete substrates. However, because of their volatility (high evaporation rate) generous application amounts are typically necessary.

Siloxanes are similar to silanes and at the low end are almost as small (2 nm). As they get larger (up to 30 nm) their molecular structure gets more complex,

preventing them from penetrating as deep, Moore says. Siloxanes are less volatile than silanes and ideal for more porous substrates. However, a high concentration can often darken concrete.

Siliconates are the smallest of the three (0.3 to 0.6 nm) but due to their chemical makeup they don't penetrate as well into concrete. They are blended on their own, Moore says, as they're not compatible with silanes or siloxanes.

"Silanes, siloxanes and the blends play important roles as there are different porosities in concrete," Moore explains. "It's nice to have a mixture of smaller and larger molecules to

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Photo courtesy of Clemons Concrete Coatings

In blended water-based penetrating sealers, the silane penetrates deep into the concrete while the siloxane settles closer to the surface. This produces an appealing water-beading effect when the sealed surface gets wet.

essentially plug all the holes.”

Sanders says his company’s silane/siloxane blend, Super Seal M, has been well received by contractors. “It gets into the concrete and protects against freeze-thaw, de-icing and salt damage — and that’s huge.”

Most penetrating sealers change the surface tension of the substrate and are hydrophobic, meaning they repel water and protect against water-soluble material — such as salt, chloride, sulfates and other corrosive material. Clemons’ newest penetrating water-based sealer, Super Seal M+, also has oleophobic qualities to protect against oil and chemical stain.

When sealer meets sealer

Most water-based penetrating sealers don’t change the appearance of the concrete, an attribute often cited by people who are turned off by the shiny,

Water attraction in Indianapolis

For years, Tyler Stephens, owner of Stephens Concrete Sealing in Indianapolis, used to use your typical film-forming sealer on his outdoor concrete projects. “It left a little sheen behind and had nice curb appeal, but it didn’t bead water the way penetrating sealers do,” he says.

For the last three to four years, he’s been using Clemons Concrete Coatings’ Super Seal M and Specco Industries Waterstopper WB on the driveways and walkways he installs. “They have great beading qualities and my clients are amazed when they see the water beading for the first time. It gives them some security because they can tell when their driveway is sealed.”

In Indiana where he lives, they have vicious freeze-thaw cycles and the sealers made with silane or siloxane hold up extremely well. He says he prefers to use the water-based versions over the solvents because they are easier on the equipment and friendlier to his employees. The solvent sealers last longer but are not enough to be a deterrent to water-based.

“When the penetrating sealer dries, you can’t tell the driveway is sealed,” Stephens says. It’s a different story when clients dump water on the surface.

“My customer satisfaction has improved when I switched from topical to penetrating and they have a visual to show them the concrete is sealed. We’ve also gotten a lot more referrals off that characteristic.”

As a bonus in the winter, salt can’t penetrate the sealed concrete surface and his clients can clean off the driveway with a leaf blower instead of having to get out a shovel. “The



Photo courtesy of Stephens Concrete Sealing

ice forms but it doesn’t have anything to bond to,” he says.

About 95 percent of Stephens jobs are outside. Last year, he completed 760 broom-finish jobs totaling almost 1 million square feet of concrete that was cleaned and sealed.

www.stephensconcretesealing.com

plastic look of most topical sealers and their slipperiness factors. But if they later decide they want the extra protection afforded by a film-forming sealer, it can be applied to the surface with minimal surface prep, Moore says.

Some manufacturers are adding a small amount of acrylic to their penetrating blends to help with color enhancement while remaining in the category of penetrating sealers, says Solomon Colors' Becker.

"The acrylics that have been a mainstay for 30 years are no longer as attractive to people considering the maintenance involved to keep them looking good," he says. Unlike film-forming sealers that need to be reapplied every few years, "Penetrating sealers don't create a surface that will flake off or become compromised visually."

One disadvantage of applying a penetrating sealer to an existing slab is really more of a challenge, Becker says. "To be effective, a penetrating sealer needs to be applied to a surface that doesn't have a curing compound or sealer on it."

If a curing compound was used on the surface and it hasn't completely dissipated or if had been previously sealed with a film-forming product, the surface must be stripped, power washed or lightly etched to remove all residue before the penetrating sealer can be applied. 🛠️

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COLOR FIX

The art, science and strategy of restoration and remediation

by Joe Maty

RICK Ogden, owner of Rick Ogden Concrete Construction in Pryor, Oklahoma, traces his start in the decorative concrete industry to the late 1970s when he stained his first floor.

“The stain went away the first winter,” he recalls. “Of course, I’ve seen the industry change and evolve tremendously. The evolution now is incredible.”

That may be so. But concrete that’s stained, integrally colored or otherwise given a decorative treatment will eventually need a freshening up, if not a total do-over — whether the original treatment was one of those early water-based formulas that withered the first winter or one of today’s high-performance proprietary systems.

Then, too, there’s the rescue mission where the wrong kind of color treatment was used.

That was the case with a job facing Grant Langston, owner of Bella Rocca, a decorative concrete business in Salt Lake City.

“The homeowner put a wood sealer on a concrete, wood-stamped back porch,” Langston says. It wasn’t long before the sealer turned milky, started peeling and prematurely aged. “It was a huge eyesore in a gorgeous backyard at the base of the mountains in Salt Lake.”

Langston used an eco-friendly stripper from NewLook International and power-washed the surface after a specified dwell time. A wet vac was used to prevent runoff into adjacent flowerbeds and grapevines.

After a sufficient dry time, Langston used a translucent stain from NewLook’s SmartColor line, working the stain with the grain of the wood stamp rather than the more common random circular motion. He added layers with an applicator brush to get the depth and



It looks like wood, but it’s concrete — so don’t use a wood sealer on it. The owner of an upscale residence at the base of the mountains in Salt Lake City learned this lesson the hard way. Repairing the damage involved stripping and refinishing with a translucent concrete stain.

Photos courtesy of Bella Rocca

intensity he wanted. Langston used a diluted concentration of 3:1 water to stain because the color — Milk Chocolate — “is quite strong” and a 1:1 ratio would essentially result in a near-solid color.

The diluted concentration and application technique produced the look Langston sought — a varied intensity that looked like real wood. He then applied a water-based, acrylic-urethane sealer from NewLook’s SmartSeal line. “You can put stain over this surface,” he says, allowing subsequent stain touch-up where standing water and plant pots may mar the appearance.





A lap pool that overlooks Salt Lake Valley received a facelift that's "hot right now" — a gray-stained concrete deck combined with white-painted ceiling and walls. The owner specified the colors.

For a lap pool at the rear of a home overlooking Salt Lake Valley, Langston patched the pool coping, which had been integrally colored in a peach shade and given a salt finish to reduce slip. The surface was power-washed prior to patching and staining with NewLook's Original Solid Color Stain in a gray color called Roman Stone. The existing joints were masked with tape to maintain the clean white joint lines.

The medium-gray stain was combined with white paint on the ceiling and adjacent walls in a design specified by the owner, a residential builder and rehabber who "really knows



his color," Langston says. "No one believed the owner that the medium gray would look good, but he was ahead of the 'gray trend' that's hot right now."

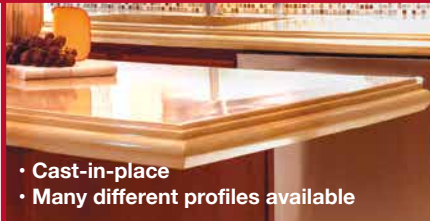
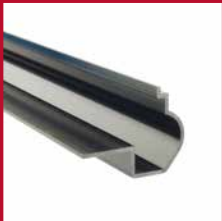
The pool project was part of an extensive rehab of the entire residence. Langston also painted the cedar-wood ceiling above the pool, and adjacent window and door trim, with a stain-blocking primer and white topcoat.

Proven where it counts

Ogden sticks with products and materials he knows, but says he's not resistant to new and better products.

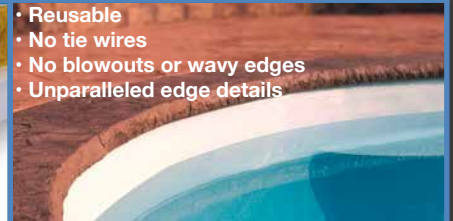
"Coatings have come a long way and coloring systems are starting to become reliable. Acid stains are very dependable inside and out. I have been resistant to water-based anything, as in the early years they were just paint and later did

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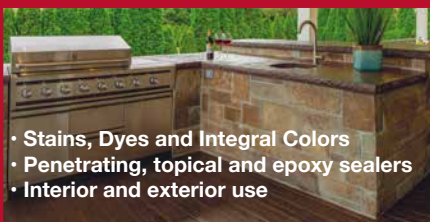
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Photos courtesy of Redi-Mix Colors

Ramp Redo

As part of the Aagen Group's renovation of its facilities in Houston, the Business Flooring Specialists refurbished the company's shipping and receiving ramp. The ramp was showing wear and tear and also needed its traction improved — especially when it was wet.

According to Aaron Statser, general manager of Business Flooring Specialists in Houston, BFS recommended Redi-Mix Color's Concrete Protection Process. "CPP did two things," he says. "It improved the ramp's aesthetics by giving it stain protection from oil and other chemicals, and it increased its coefficient of friction when dry or wet."

The process basically involves steps that begin with cleaning and degreasing the concrete, followed by an application of a synthetic acid-etching agent to open the pores. The etching agent, notes Statser, has a triple-zero rating from the Environmental Protection Agency.



Next, a penetrating sealer is put down which acts as a moisture mitigator and serves as the bonding agent for a single-component moisture-cured urethane topcoat.



The topcoat is colored with a pigmented dye pack in the color of your choosing. "We went with black," Statser says, because hiding stains was important to the customer.

After the initial topcoat was applied, Business Flooring Specialists broadcast aggregate and then top-coated the ramp one last time.

— Stacey Enesey Klemenc

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 www.redimixcolors.com

not bond well.

Ogden formulates color-restoration approaches that aren't necessarily industry standards but have been proven to work. "Sometimes," he says, "they are the only way possible with budget restraints."

Case in point: Ogden says he'll color on top of coatings, which many contractors hesitate to do. But, he says, the methods and products he uses are very specific. Plus, he emphasizes the importance of owners being aware of long-term maintenance requirements.

For example, he'll color with Smith Paint Products' concrete stains on top of solvent-based acrylics or epoxies. The stain must dry a minimum of 24 hours, as specified by the manufacturer. Once the stain has dried — "and there are no exceptions to this requirement" — the surface must be top-coated with a sealer of the contractor's choosing. Performance and color retention will depend on the coating's maintenance, he says.

He uses acetone dyes in much the same way, but again, the clear coat on top determines long-term color performance, he says. Acetone offers the advantage of rapid dry.

Grinding as a prep method has greatly enhanced the performance of water- and acetone-based colors, Ogden says.

"Since we have started grinding floors to prepare them for stains and dyes, the performance has changed dramatically," he says. "Coatings will bond and water-based products have become reliable. And in this industry, without reliability you have nothing but problems."

Restoration vs. new surface

Kevin Brown, an Eastvale, California, contractor who regularly finds himself on rescue missions involving decorative concrete that's seen better days, describes a recent project where a whole new surface — in the form of an overlay — was the prescribed solution.

The original concrete, an acid-stained walkway leading from the street to the home, was old and tired. The owner also wanted a completely different look. Although KB Concrete Staining has successfully executed color-restoration work using NewLook



Here, the owner's request for a dramatically different look for this entry walkway led to a decision to create a new canvas — installing an overlay and employing a texture stamp, decorative saw cuts and contrasting stains.



International stains, Brown pitched using an overlay to deliver this “different” look.

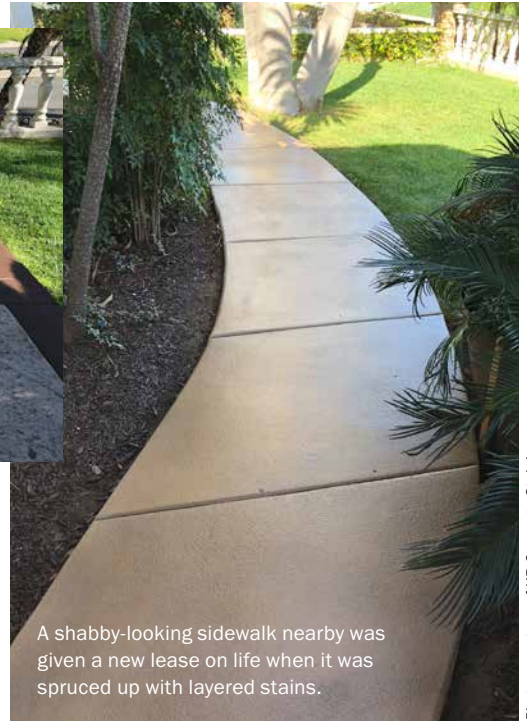
Following a surface grind as prep, he installed Super-Stamp Gray. He then textured this Super-Krete product — a cementitious, polymer-modified stampable overlay applied with trowel and gauge rake — with ProLine Seamless Old Granite Cleft Stone.

The next day, he made narrow, decorative saw cuts designed to produce a “clean, precise” look as opposed to the

original surface's wide cuts that looked dated.

Brown then stained the borders dark and the adjacent areas a lighter color with NewLook TiqueWash, water-based antiquing stains that produce a natural-looking, multitone finish on textured concrete. He sealed it all with a solvent-based clear sealer from NewLook.

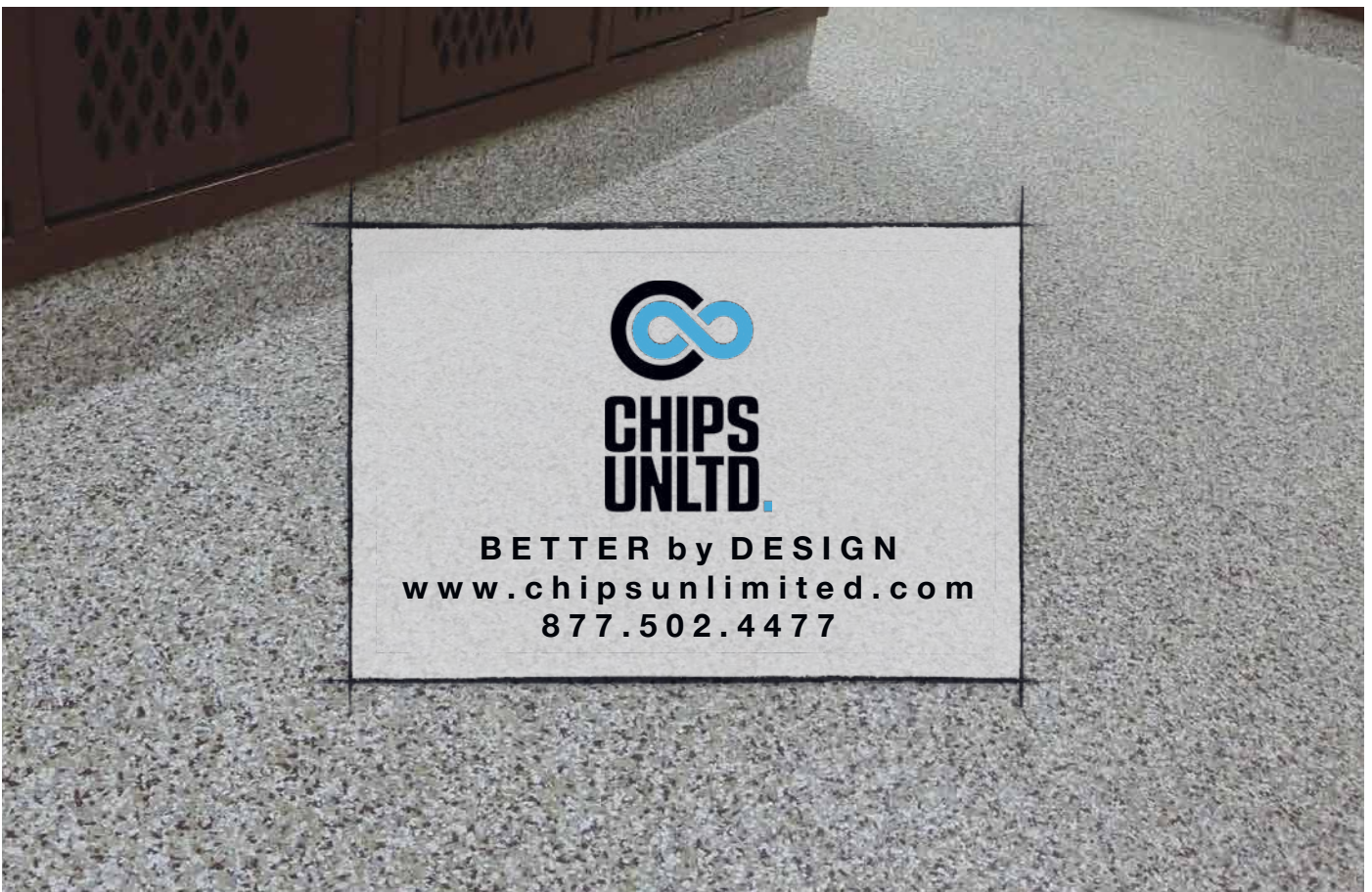
On a nearby, winding sidewalk, Brown recommended applying new



A shabby-looking sidewalk nearby was given a new lease on life when it was spruced up with layered stains.

colors where the original color was woefully faded. After cleaning the surface with an eco-friendly detergent and power-washing it, the crew applied a solid base color and then sprayed

Photos courtesy of KB Concrete Staining





several transparent colors on top of that to create a faux finish look. They also brushed a solid-color stain on the joints to accent them.

In another project, a seamless stamped, faded and weathered pool deck and coping had taken on the mottled appearance that integral colors can exhibit over time, Brown says.

“With integrally colored concrete, the color can vary as cure proceeds, giving a nonuniform appearance from trapped moisture and air in the concrete. This becomes more apparent with age,” Brown says.

Brown cleaned the surface with NewLook’s 3-in-1 Prep, an eco-friendly, citrus-based acid cleansing detergent, before pressure-washing it. Two light earth-color water-based transparent stains were used on the deck’s field areas, with a darker, contrasting solid-color water-based stain for the coping



Photos courtesy of KB Concrete Staining

To bring new life to a faded and weathered pool deck and coping, two different earth-tone transparent stains were used in the field areas of the deck. A darker, contrasting solid-color stain was applied to the coping and adjacent wall caps.

and adjacent wall caps.

A water-based aliphatic urethane sealer was used on the wall caps and copings, while a solvent-based gloss sealer that enhances the look of the surface was used on the deck field areas.

Formulating the right prescription

Bryan Lassiter, general manager of Ardor Solutions in Oklahoma City, says the company has successfully restored or added color to existing concrete using Revive Exterior Concrete Stain, a penetrating siloxane product from

Scofield, now a Sika brand.

He cites a recent project where a hospital in Oklahoma City needed to remedy an exterior concrete plaza that had been stained and sealed a few years earlier. The sealer had created a slippery surface, and salt used for de-icing had deteriorated the colored concrete’s appearance. At the same time, the owner wanted a surface that wouldn’t require frequent sealer application going forward.

The surface featured score patterns and colors. Ardor Solutions worked to match the original colors, which had faded somewhat, Lassiter says. Some new concrete also had been poured as part of a drainage-system change.

Ardor Solutions sandblasted the entire concrete surface to make it nonslip, then applied Revive to stain both the existing colored surface and the new, gray concrete. UV stability was another plus for the stain, he says. No sealer was used, although it is an option, Lassiter notes.

In another project, the Oklahoma City Zoo decided it wanted color added to the gray concrete in one of its exhibits. Here, the owner sought a finish that was more durable than a topical treatment and more akin with the monolithic, opaque appearance of integral color. Lassiter fulfilled that request with Revive, a formula that’s “really a penetrating base they add pigment to,” he says.

In the zoo project, Scofield’s Repello Water & Stain Repellant, a



Photo courtesy of Ardor Solutions

Oklahoma City Zoo officials decided more color was needed to enliven a gray concrete exhibit area. To remedy the situation, Ardor Solutions applied a penetrating opaque stain topped with a water and stain repellent for added protection.

proprietary acrylic blend, was applied over the exterior stain. A dose of extra protection, says Lassiter, was in order in this demanding environment.

Color refresh and reseal

Scott Kunkel, of Kunkel Floor & Surface Care in Fort Wayne, Indiana, offers a tour through his company's "Clean, Color Refresh and Reseal" treatment in a project for a real-estate management firm involving a stamped and colored concrete walkway leading to a property's front door. The walkway's original color treatment and sealer had degraded and faded extensively.

During inspection, Kunkel's crew noticed areas where the original color and acrylic sealer remained intact. Elsewhere, on about half the area, both the color and sealer had totally worn off.

Kunkel's team set about cleaning the surface by scrubbing it with a Simple Green and water solution and a deck brush to loosen dirt and residue. Then the area was rinsed clean with a robust 4,000-psi pressure wash and dried for about 24 hours.

For the color-refresh part of the project, the crew protected the surrounding brick, driveway, landscape and grass from overspray. They then applied one saturated coat of a light charcoal Liquid Colored Antique Concrete Stain from Direct Colors with a garden-grade plastic pump sprayer.

The surface dried again for about 24 hours. At this point, it was evident that the remaining acrylic sealer wasn't flaking and was still well bonded to the concrete surface. Due to the mineral spirits carrier in the stain, the material bonds to both



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This stamped concrete walkway's original color was extensively faded but was transformed beginning with a thorough scrub and power wash. This was followed by an application of a light charcoal concrete stain and two coats of a sealer with a satin finish.

the exposed concrete and the existing sealer, so stripping the remaining sealer wasn't necessary, Kunkel says.

The crew then applied two thin coats of a Direct Colors satin-finish, outdoor acrylic concrete sealer to the entire recolored surface.

Profiting from specialization

John Pla, head of a stable of business units in Southern California that includes the RestoraCrete brand, says there's relatively little new under the sun regarding color-restoration methods and materials.

The real story, Pla contends, is what contractors can do on the marketing and business side of things — presenting themselves as specialists who focus on expertise in certain facets of the trade.

For example, staining pool coping is a niche, as is staining stamped concrete and concrete pavers, he says. Expertise in one or more can be marketed, with reputations built and value added.

Business model and marketing approaches aside, Pla also gives high marks to the NewLook International color-restoration portfolio, saying it delivers highly predictable staining results.

"Customers today want specialized contractors," not contractors who stain old weathered decorative concrete one day and pour sidewalks the next. "Promoting the fact that you have

specific knowledge on a particular type of 'pain' increases consumer confidence and inherently increases sales," he says.

"Specialization is where margin and a company's foundation grow best. You can't build a strong brand doing everything."

Pla talks about "scale" within these specializations. "Contractors, for fear of not having work, will naturally do the shotgun approach to their service menu, which without intention limits their ability to grow and scale the business."

Still, Pla adds, what works in his market area in Southern California isn't going to be the same in other parts of the country. In Florida, for example, pavers are the story, "so it may make sense to focus there." Still other geographic regions may not have the critical market mass to make such narrow specializations succeed.

He suggests that specialization also enhances the contractor's ability to quantify a job's anticipated time frame and cost, and tell the prospective customer upfront something about cost and project duration. At the same time, he continues, the contractor can "prequalify" potential clients without even visiting the site.

Pla calls this process an "upfront" contract, where the potential client is given an idea on cost and timing, and thus is ruled in or ruled out as a customer. "A perspective on respecting

your customer's time as well as placing a true value on your own time is important."

Pla says he'll ask the interested caller: "We're a month out. Does that meet your time frame?" Or, "On a scale from one to 10, where are you with your time frame?" He may even touch on budget. "Our average job is \$2,500 to \$3,500. Does that meet your budget?"

He'll also give an "average" per-square-foot cost figure for this specialized service, with the caveat that this can go higher if there's more to the job. Then, if the caller takes a pass, the contractor is saved the waste of time and expense of a site visit. If the caller remains interested, a budget can be formulated that nails down the specifics of what the client wants done.

"Marketing in the future is here now and working towards a progressive way to reach customers and interacting with them is just as important as any other part of your business," he says.

Bella Rocca's Langston, on the other hand, says specialization can pay off if you have enough work and enjoy the type of work involved in the specialization.

"While I enjoy fun artistic pieces, they aren't always the most profitable. It's often the boring colors that cover large square footage that pays the bills." Contractors often have a specialty but offer a range of services to keep a steady stream of work, Langston says.

But, he adds, "Higher-profile restoration work can help win larger contracts because you're able to show your attention to detail and your craftsmanship."

Matching budget with project for successful outcome

Budget always figures extensively in any restoration project, KB Concrete Staining's Brown says. He shows prospective clients a catalog of different approaches shown in images and with cost estimates per square foot.

"They may want something and not have the budget, or maybe it's not technically feasible. They may want champagne but have to settle for a good beer."

Brown says he evaluates the existing project site's condition, and if it's still

in good shape he can do a lot with it without replacing the surface. Colors and materials available when projects were done years ago pale by comparison with what's offered now, he says. Today, he can combine a base color with transparent stains to give a whole new look to an aged concrete surface.

Getting on the same page

In working with owners and designers, Bella Rocca's Langston says commercial or institutional facility managers typically know what they want when they reach out to you. "Still, I'll often ask if they'd like some help in deciding colors," he says.

"Most appreciate another opinion, and some will ask what other companies are doing with similar spaces. I have folders on my computer with various color combinations that I can quickly pull from to help show the customer what certain colors look like in a variety of spaces."

But, Langston cautions, "If you don't feel you have an eye for style and color, don't market that you do." Instead, "Focus on your ability to deliver what they tell you they want." 📁

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Should You Seal Now or Hold Off for Warmer Days?

by Chris Sullivan

IN my experience, sealer issues caused by cold weather don't occur in the northern "cold climates" but rather in the more temperate or "shoulder" regions that have transition seasons. They also tend to happen in warm climates that may experience cold weather for only brief periods of time.

The inexperience of having to deal with cold weather can lead to a sealer-related callback next spring. No matter where you live or work, having a better understanding of why and how cold temperatures affect sealers may help you someday if you must decide to seal in the cold or hold off for warmer weather.

Heed advice on minimum film-forming temperature

Generally, 50 degrees F (10 C) is the accepted minimum temperature when applying most film-forming concrete sealers and coatings. That number pertains to the temperature of the sealer, as well as the temperature of the air and the surface being treated.

Penetrating sealers that don't form a film typically can be applied in temperatures below 50 F. No matter the sealer or coating, always refer to the technical data sheet for application guidelines.

All film-forming sealers and coatings have a minimum film-forming temperature (MFFT). When the temperature falls below the MFFT, the sealer film doesn't come together properly. Typical signs that a sealer was applied below the MFFT include haziness, weak sealer film and/or white dusty powder on the sealer surface.

All sealers and coatings (other than 100 percent solids systems) comprise two primary components — resin and a liquid carrier. Once the sealer is applied, the resin, also known as the solids, creates the protective film through the process of coalescence.

As the temperature drops and gets close to the MFFT, the resin's ability



Photos courtesy of Chris Sullivan

This sealer failure was caused by condensed moisture in a low spot on the floor that created an area that fell below the minimum film-forming temperature.

to coalesce slows down. Once the temperature reaches or drops below the MFFT, coalescence stops and the sealer film won't form at all.

Note evaporation rate

When temperatures drop, the evaporation rate also slows down. Since most sealers and coatings rely on the liquid carrier evaporating to properly dry, this slowing evaporation rate also affects film formation. It's important to note that evaporation rates vary depending on the type of solvent in the sealer.

For example, water will evaporate much slower than acetone, so cold temperatures typically affect water-based sealers more than solvent-based sealers. Note: Switching to a solvent-based sealer may allow you a little more breathing room if the temperatures are hanging around the 50 F mark. I am never one to recommend taking undue risks, but I also realize that real-world pressures exist, and many times you need to just get it done.

Other factors to weigh in

Since sealers or coatings are being applied to a substrate, the temperature of the substrate and the surrounding air are also important. Key cold weather environmental and substrate factors to consider are condensation, dew point, moisture traps and surface temperature gradients.

Condensation: Water vapor condenses and forms liquid water when it comes in contact with a cold surface. A great example is steam in a hot shower condensing into water when it hits the cold tile.

This same process occurs when the temperature drops and moisture in the air hits cold concrete. The concrete may look dry, but if the humidity is high the surface could be saturated. This phenomenon is known as surface-saturated dry, and it can lead to sealer adhesion and haze issues.

Condensation is more of an issue in the fall and spring when there are large temperature swings. It's best to wait

until the surface and air temperatures rise and even out.

Dew point: This is when the air reaches a temperature where water begins to condense and changes from vapor to liquid. An important environmental factor, the dew point should be monitored when sealing in cold temperatures.

If the humidity is high and the temperature is below the dew point, you will have water condensing on the concrete. Sealing isn't recommended until the temperature rises and the substrate dries.



Trapped moisture in saw cuts on a cold slab create moisture haze and efflorescence.

Moisture traps: During cold weather, these are places where moisture can get trapped. Consequently, they may not dry as fast or may be a different temperature than the surrounding areas. Common moisture traps include cracks, joints, cold joints and raised decks (areas where cold air can get below).

Surface temperature differences:

These are changes in temperature across a surface base caused by other factors. Examples include temperature differences on raised slabs compared to slabs on grade, or interior concrete close to walls or doors that may be colder or warmer depending on the exterior temperature.



Cold exterior temperatures created a temperature differential on the concrete that led to sealer damage near the door and walls.

Just because the project may be inside doesn't mean cold temperature issues go away. I've seen my fair share of interior sealer failure caused by cold slabs. Just because the air is warm doesn't mean the surface is warm, especially in the winter months.

Accuracy is important

When sealing in cold weather, it's important to have accurate temperature readings. Getting accurate air temperature is easy — it's just a click

away on a smart phone or a quick glance at a temperature reading in a car. Getting an accurate surface temperature requires an infrared thermometer. These are readily available at most big box stores, online or auto parts stores. All you do is point and shoot!

I often hear from applicators who say they have been applying sealers successfully for years at air temperatures between 35 and 45 degrees F. But how successful? A sealer applied close to the minimum film-forming temperature may look fine for a while, but six to 12 months later I'd go back and see how well it's performing. Every project has different environmental factors to consider, but I still suggest using the 50-degree rule as a safe guideline.

Choosing to seal concrete at temperatures below 50 degrees substantially increases the risk of premature sealer failure. Remember, if you're considering sealing in cold temperatures, the only remedy for cold weather sealer issues is almost always stripping and resealing which is labor-intensive and costly. 🛠️

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

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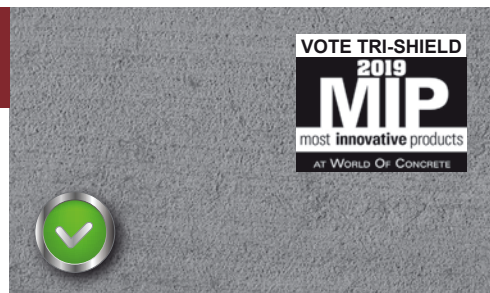
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Pour-Backs, Trenches and Cutouts

Issues polishing contractors should address

by David Stephenson

For both new construction and remodel projects, polishing contractors face similar issues when trying to get concrete not poured at the same time to aesthetically match. This is a major problem in the world of construction.

From tile to epoxy, every other flooring material can easily cover the differences in concrete placed at different times. Not so for polished concrete. I'll address common issues and recommend ways to overcome them to the customer's satisfaction. These issues must be addressed for polished concrete to succeed and continue to grow.

Colorful component variations

I think most people realize concrete from different manufacturers will look different, but the reason for this isn't common knowledge. Concrete is basically made of four components: cement, sand, large aggregate and water. The water doesn't cause an issue.

Cement from different manufacturers is usually a different shade of gray. Some manufacturers have lighter or whiter cement while others have much darker materials. When placed next to each other, concrete containing different cements has lighter and darker tones (*see photo top right*).

The second component, sand, differs in color because it's mined in different areas. Sand can range from white to dark brown. When we polish, we typically expose the sand layer, so different colors of sand are extremely noticeable (*below*).



Photos courtesy of David Stephenson

The last component that affects the color is the rock. It's typical to think that the rock is deeper into the slab, so it shouldn't matter. The reality is that when you remove the paste and expose the sand layer you also expose the top edges of the rock. Therefore, the color of the rock will affect the colors you see. For example, if one area of the slab has river rock as the large aggregate, it will have red and brown tones. If the next section placed contains a local inexpensive traprock, it'll have gray and white tones (*below*).

Ready-mix suppliers have a sand pit and a couple of rock quarries where they source their raw materials. Since each quarry pulls material from different areas, the rock and sand are various colors. Suppliers don't consider the appearance of their product like decorative concrete contractors do. Their job is to provide a structurally sound foundation that meets specification requirements for compressive strength. All thought and testing are focused to achieve these goals. Ready-mix suppliers aren't concerned about concrete's color or aesthetics after it's been placed.



New construction

Typically, concrete is placed in 10,000- to 20,000-square-foot sections. For smaller projects, this means the concrete can be placed in one pour. Larger projects, though, can be broken into however many pours are necessary to allow the placement contractor to manage the concrete properly. For your

typical grocery store, that's usually between two and four pours.

Sometimes, if no one is involved on the front end to let the contractor know any different, the concrete can be sourced from two different suppliers or from the same supplier but from different plants.

The standards for construction for at least the last 20 years have been to leave column blockouts where the building steel can be erected after the concrete has been placed. Sometimes the blockouts are filled months after the base slab has been placed. This allows for concrete to be sourced from a different supplier or the materials used to make the concrete can come from different areas. These are the typical ways that column pour-backs can come out looking completely different than the standard floor (see photo top right).

Other options for new construction that cause problems are errors in the placement of plumbing or electrical components. A plumbing break also can cause correctly placed concrete to be cut out and removed to facilitate a repair. When these trenches are eventually filled, the concrete used can easily come from a different supplier or plant.

In the preconstruction meeting, I emphasize to the general contractor and the concrete contractor that we must get all the concrete from one supplier and from the same batch plant. It's common practice for a supplier to deliver concrete mixed at two different plants because of local traffic at the time of the placement, the capacity of that plant or the workload of orders that the plant must fill.

Having two different plants supply a project is problematic because it's highly likely that the plants are getting their sand and rock from different quarries or maybe the same quarry but different areas. Either option makes the finished product look different from section to section.

When we get to talking about the pour-backs at the column blockouts, I very carefully and specifically say: "Everyone knows that the pour-backs will be a different color because they are poured at a much later date and won't be cured as long as the regular slab. For us to get the best appearance



and the closest match, these blockouts should be poured with the same concrete mix from the same supplier and plant. You must tell the supplier we need the same sand and aggregate that was used on the main floor."

Even though the concrete won't be mechanically troweled in these small areas, the concrete finisher needs to get these areas as tight and smooth as possible with a hand trowel. The concrete in the blockouts needs to be at the same elevation as the surrounding concrete. Any height variance, high or low, will show large aggregate after the grinding is complete.

Remodels

Remodels are always more interesting since the concrete is already in place.

If, after grinding, there are slab areas that don't match by the time we get to a 400-grit resin, I'll typically recommend using a heavily diluted black dye on the lighter slab areas to make them closer in color to the darker slab sections. This is done before any other dye is installed. By getting the concrete closer to the base color, any additional color will match much better.

In the preconstruction meeting I ask if any trenching is necessary or if any areas of concrete should be removed

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and replaced. If the answer is yes, I have a very specific list of points that I review and then provide to the GC via email after the meeting.

First, I discuss the sand and aggregate issue. I request that when the concrete is cut, a section be cleaned and retained so the sample can be given to the ready-mix supplier so he can source and match the sand and large aggregate. This isn't typically an issue if the materials are quarried locally. It may not be the standard materials used at that time by that plant.



Second, I discuss the method of removal. Typically, a cutting contractor doing a trench removal will cut the long lines and then do the cross-cut chop lines over those so the concrete can be removed in smaller, more manageable chunks. This method leaves tails at every crossing cut (*see photo above*) which must then be filled like joints.

If they pop a chalk line showing the requested width and do the crossing cuts first, the long lines can be cut to a width that includes all the cross cuts, removing the tails sticking out on both sides. This method leaves clean straight edges which most owners prefer. The concrete with the matching sand and aggregate can be poured back and there is a much higher likelihood that the color will be a close match.

Third, I discuss consolidation and troweling. Without discussing it, trenches and small pour-back sections are typically just troweled by hand. Without knowing that this will cause a different look, this is the easiest and fastest way to get the work completed.

I request that the concrete be troweled with a standard walk-behind trowel. Hand-troweled concrete has a

very thin layer of paste at the surface. When any grinding occurs, this thin skin is removed and the concrete below is extremely porous. This makes the concrete look almost white because the pores can't be polished. It's like trying to polish pumice stone. By using a walk-behind power trowel, the concrete gets consolidated to a depth of 1/2 inch or so.

I also ask the contractor to let the trowel go over onto the existing concrete a couple of inches all the way around. This serves two purposes. First, it allows the concrete to be mechanically finished along the edges. Second, it serves as an additional precaution to make sure the concrete is at the same elevation as the surrounding slab.

Typically, people are concerned that the trowel will scratch the existing concrete. I remind everyone that the concrete will be ground which will remove the possible minor scratching. I also ask the contractor to cure the trenches, a step often overlooked. If they're not curing, there's a much higher likelihood that the trenching will have shrinkage cracks.

I either recommend a water cure with moisture-retaining blankets for seven days or a subsurface film-forming cure (like Skudo Cure) which is sprayed at the time of installation. Just like regular concrete, the pour-backs are ready for grinding at seven days and ready for polishing at 28 days.

As a side note, I've found if the penetrating cure is used the concrete will hold a polish as early as 18 days versus the 28 typically required. I'm regularly asked why we have to wait the full 28 days before polishing. The answer is because the slab is still curing and blowing a lot of moisture, any polishing will look good at the time of installation, but the gloss disappears within a few days as it is attacked by moisture and dissolved minerals coming out of the concrete.

Repairs

There are times when standard concrete can't be used in repairs or trenches because the area being remodeled is high up in a multistory building or in the middle of a mall. In these cases, I typically request that the


steps for removal mentioned earlier be followed, but I don't worry about matching aggregate, sand or cement. Instead I'll get the sand and aggregate myself from a ready-mix supplier and use those materials with a polishable overlay.

There are several good overlay manufacturers that make fantastic products. Taking these and adding the aggregate and sand per the manufacturer's instructions, along with the diluted dye to get the tonal value of the base concrete colors to closely match, will provide the owner with an acceptable surface.

The same materials can then be used anywhere that a polishable overlay needs to be used. Typically, I see this at broken joints, large areas of delaminated concrete or where old walls were placed and there is a long line of spalls where the wall base was pulled out. The additional benefit of using a polishable overlay is that the surface will be dense and tight which allows for a good polish.

A better look

Armed with these tips and tricks, I hope you can educate the owner, the general contractor and the concrete placement contractors on how to provide a better overall polished concrete finish.

In most cases, the owners are understanding when these issues are explained on the front end. The general contractor and the architect will be glad you were able to help get an appearance that the owner finds acceptable. 

David Stephenson, based in Dallas, Texas, is president of Retail Polishing Management, a large national flooring installer. Prior to his position with RPM, he helped as a consultant with retail polishing programs and troubleshooting concrete issues for companies around the globe. Throughout his career, David has owned contracting companies that installed floors as well as manufacturing companies that made products that changed the industry. He can be reached at david@the-rpm-group.com.



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Practice Makes Perfect: Hand Brushing the Details

Part 1: Acid Stain

by Rick Lobdell

OVER the last couple of years, I've written articles on how I use math to break down design layout and my views of color theory. This time, I'm going to share one of the little details that help my projects look amazing — how to properly use a brush.

I've talked with many of you over the years. You spend hours taping and masking your borders' minutest details so you can spray and be done in minutes. Most of you think using a brush would take longer. I beg to disagree ... once you've acquired the knack. Just like most other tools you use, it takes practice. You won't master proper brushing techniques overnight.

A brush in the hand

Brushes are the most underutilized tool in any concrete contractor's arsenal. They don't cost a lot and most times are disposable after each use. They allow me not to spend a fortune on plastic and waste time masking off everything. Instead I get down on my hands and knees and brush every detail.

The first thing you need to know is how to hold a brush. Even though the handle is larger, hold it the same way you would hold a pen or pencil. The grip shouldn't feel awkward. Don't hold it like a knife as if you were about to smear peanut butter on your border. You have limited control holding it like that.



From acid stains and water-based stains to dyes and sealers, I have different techniques when applying. For this article, we'll just focus on how to brush acid stain.

Going for a dip

After you get used to properly holding the brush, you need to understand how to dip it. Never, I repeat never, dip your brush so far into your acid stain that it touches the metal frame. You'll get too much stain up into the brush and it will drip everywhere. The most important guideline to brushing is not to drip.

There is a simple way to ensure no drip. Dip your brush into the stain so that only the bottom half to one inch,

at the most, is wet. Then lift your brush out of the stain and forcefully lift and lower the brush a short distance twice to get rid of excess stain while it's still over the cup. Don't move so forcefully that you splatter the stain.

Make sure you don't fill the cup too much so there's room for this step. If you quickly do this twice, you should have no dripping whatsoever. I can travel three to four feet away from my cup with no drips.

You must be diligent and consistent with this technique. If you're not careful, you can drip a color in the wrong area. It only takes one mistake to tarnish the borders' overall look. It's important to repeat the same steps every single time you dip your brush.



Getting up to speed

Before we get into when the brush touches the surface, I'd like to point out one more thing. Once you start brushing, don't just use your wrist to move the brush. Use your entire arm. Think of the brush as an extension of



your arm. Move your arm from the shoulder all the way to the brush at one time. This will help you control splatter, edges and all movements you need to ensure consistent application.

Now let's get into the actual application. Brushing acid stain is different for all concrete surfaces. It's easier to hand brush a smooth hard-troweled floor than it is to brush a heavily broomed floor. Be aware and prepared for this ahead of time. It's also easier to see brush marks on smooth surfaces than it is to see them on rougher textures.

Regardless of which texture, the technique is similar. You must pay attention to how much surface each dip will cover. Don't brush too far on one side or the other of your border. Move at an even pace around the perimeter, especially



with acid stain. I usually plan to dip and brush about 5 inches at a time. This depends on the border's width but it's a good average to plan for. As you apply the stain, swirl the brush in a consistent and slow motion.

Start in the middle of the space you plan to brush and work your way to the edges. Once you reach the edges, you can brush in a straight line. Make sure you stain the entire edge because if you don't, you'll see spots with color and no color the next day. They will stand out.

Once you get the edges done, lightly go back to swirling them into the middle. This will get rid of the straight brush marks you made down the edges.

In the photo here, you can see a job I was called to where the installer brushed the edges first and then went back and stained the center. Notice how the edges stand out from staining at different times. This is why you must stain the entire border all at once.



The goal to hand brushing is to brush at a speed where you can keep a wet edge. You don't want to go too slow or push the material so far that you start brushing it to the point of it getting dry.

By keeping a slight puddle as you brush, you'll allow the stain to react instead of showing every single mark you make. It only takes a couple of projects where you use this technique and you'll master a brush. Stop wasting all that plastic and start practicing with a brush. 🖌️

To see a video showing this technique, go to:

<https://youtu.be/nLHTTk08peA>

Rick Lobdell, a classically trained artist with a master's in fine arts in painting from the Savannah College of Art and Design, has also studied math and drafting. In this series, the owner of Concrete Mystique Engraving in Tennessee will explain how he conceives his well-known designs. He can be reached at rick@concretemystique.com.

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Whatever Floats Your Boat

by Stacey Enesey Klemenc

ABOUT 20 people gathered together Sept. 27-30 in Manchester, California, a town about three hours north of San Francisco, for the third annual Mendo Mini Campout and Boat Build.

The idea for the campout was hatched by host Nathan Hake of Cranium Construction and his friend John Bass of Surface Form during one of the “Epic” events put on by the now-defunct Blue Concrete. The men chose to focus on concrete boat building because, Hake says, boats are one of the last objects you’d think would be made of concrete. It also helps that there’s a working pier nearby in Point Arena where they could



Photos courtesy of Ernie Dojack



launch whatever they made.

This year, the group built two 20-foot fiberglass molds using Smooth-On’s EpoxAcoat as a gel coat and backed them with fiberglass cloth and Smooth-On EpoxAmite. They then cast two boats.

The red boat, “The ReKrakken,” was made with a traditional GFRC mix design of a sprayed face coat and a hand-packed AR glass-fiber backer applied about ¾-inch thick. The boat weighed in at about 1,480 pounds.

The green “Creme de Menthe” sported a new lightweight Buddy Rhodes vertical mix, which is 30 percent lighter than conventional GFRC mixes. The mix design consisted of AR glass fibers, a traditional sprayed face coat and a hand-placed fibrous lightweight backer for a total thickness of 1 inch. The seaworthy vessel weighed

in at just over 1,300 pounds.

With this kind of heft, “There’s always the potential that the creations will end up at the bottom of the Pacific,” Hake says. But this year’s ship launch didn’t disappoint — it was a double success.

The annual event, which will be held again next fall, is all about camaraderie, fun and promoting the spirit of collective creativity.

Hake wants to extend a big shout out to Smooth-On and Buddy Rhodes Concrete Products, without which the event would not be possible. Ernie Dojack and Jim Scheetz of Smooth-On and the iconic Buddy Rhodes and his team were eager participants. The men brought a ton of materials with them, Hake says, “Like literally a ton.”

www.smooth-on.com

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Photos courtesy of Nathan Hake



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