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A Crack-Free Overlay?

Vol. 14 No. 1 January 2014

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# **Publisher's Letter**

#### Dear Readers,

The industry of decorative concrete is growing, and it likely will continue growing for many years to come, both nationally and internationally. Not only are there new products and a steady flow of newcomers to the contracting side of the industry, but more and more supply stores are recognizing the industry's growth and getting involved as distributors. The availability of materials in the marketplace is increasing, driving down costs for products, and this ultimately makes decorative concrete more competitive as a solution for building and renovation projects large and small.



Some of you may be saying, "That just adds to my competition." Well, competition is what keeps our head in the game and our minds bent on knowing more. Decorative concrete has a way of weeding out those who are not willing to make the ongoing investment in education. And anyone that is coming into the industry ill-equipped is going to have to read 14 years of *Concrete Decor* and embrace a similar amount of time gaining practical on-the-job experience to fully appreciate the fact that decorative concrete is a technical trade. There are good and bad plumbers or attorneys out there, and the same can be said about every trade and profession, including ours. Education is an important and unavoidable key to success in our industry.

It is essential that you find a supply store that can provide the ongoing business and technical support you need. It's also important to remember that like yourself, supply-store personnel understand the value of education and the ongoing investment required to provide you with the support you need. So don't be discouraged if you find a roll of masking tape costing a little more at an industry supplier than at the big box store down the street. There are thousands of smaller stores that simply don't have the same buying power as the big-box chains. What they do have is the technical expertise and the fundamental belief that your success ultimately leads to their success. This partnership in our industry is very important, and I would like to encourage you to keep this in mind as you navigate your way to an even more successful year ahead.

Coming in April, *Concrete Decor* magazine will publish its annual Product Guide. However, in that issue we are adding a new Store Guide to help you locate products and the stores inside and outside your area that inventory the specific products you need. In print and online, *Concrete Decor* is also focused on your success, and we too are looking to 2014 and the ways we can help you improve.

Sincerely, G. Will Bent Mikkelsen Publisher

**On the cover:** This patio is the crown jewel of an overlay placed by Chantilly, Va.-based Sundek of Washington at the Dunn Loring Metro apartment complex, in Dunn Loring, Va. Sundek Classic Texture was installed in Pewter Gray, Mission Tan and Clear. To learn more, see page 76. Photo by Dick Krach



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#### January 2014 Volume 14 • Issue No. 1

Publisher: Bent O. Mikkelsen Editor: John Strieder Editorial Assistant: Tayleranne Gillespie Creative Director: Bill Simpson Marketing Director: Mary Browning Web Design: Steven Wolff Writers: Andy Bowman Bryon "Bru" Bruington Doug Carlton Gail Elber Jeffrey Girard Heidi Hudnall Stacey Enesey Klemenc Dan Knuth Lane Magnum Bart Sacco Vanessa Salvia K. Schipper Chris Sullivan Ted Uram Jacob Webb Business Manager: Sheri Mikkelsen Circulation: Meg Kilduff Editorial: (877) 935-8906 news@protradepub.com Advertiser Services: (877) 935-8906 info@protradepub.com Fax: (541) 228-9972 Northeastern U.S. Sales: Bent Mikkelsen bent@protradepub.com (877) 935-8906 Southeastern U.S. Sales: Todd Rylands todd.rylands@protradepub.com (407) 467-2758 Western U.S. Sales: Troy Ahmann troy@protradepub.com (877) 935-8906 Subscriptions: USA (one year): \$22.95 Canada (one year): \$32.95 Other countries: \$64 All prices in U.S. dollars Subscriber Services: (877) 935-8906 circulation@protradepub.com Fax: (541) 341-6443 Mailing Address: Professional Trade Publications Inc. P.O. Box 25210 228 Grimes St. Eugene, OR 97402

*Concrete Decor*<sup>¬</sup> The Journal of Decorative Concrete is published eight times a year by Professional Trade Publications Inc. Bulk rate postage paid at Lebanon Junction, Ky., and additional mailing offices. ISSN 1542-1597

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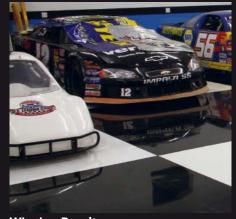




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**Andy Bowman** is president of Adaptive Concrete Innovations. He also serves as the Concrete Sawing & Drilling Association's Polishing Committee chair and as a member of the American Concrete Institute 310 Decorative Concrete Committee. He may be reached at bb@aciconcrete.net. See Andy's article on page 64.



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**Doug Carlton** is working on his third decade in the decorative concrete industry. He's the owner of Carlton Construction, located at the base of the Big Horn Mountains in northeastern Wyoming. Doug can be reached at carltondoug@sbcglobal.net. See Doug's column, "Carlton's Corner," on page 22.



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Lane Mangum is vice president, business services, of The Concrete Countertop Institute. She teaches concrete countertop companies how to grow their businesses. Contact her at lanem@concretecountertopinstitute.com. See her article on page 58.



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As an Internet marketing specialist, **Vanessa Salvia** encourages the success of small businesses through technology and online marketing practices. Contact her at vsalvia@gmail.com. See Vanessa's article on page 28.



**Chris Sullivan** is vice president of sales and marketing with ChemSystems Inc. He has led seminars and product demonstrations throughout North America. Reach him at questions@concretedecor.net. See Chris' column, "Concrete Questions," on page 56.



Jacob Webb, MBA, is a small-business strategy consultant and cofounder and vice president of NewLook International Inc., where he is primarily responsible for business development, sales and marketing. Reach him at jacob@getnewlook.com. See Jacob's column, "Fundamentals of Business," on page 26.

Talk back! Weigh in online at ConcreteDecor.net

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## Cheng Concrete announces 2013 winners of kitchen and bath sink contest

Cheng Concrete has reinvented its annual concrete design challenge with the first contest of a new series — the Kitchen & Bath Concrete Maker Challenge. The company announced the 2013 winners in November.

The Concrete Challenge was open to any concrete maker, either do-it-yourselfer or professional, with a kitchen or bath project made with any of the following Cheng mix products: Countertop Pro-Formula, NeoMix Original, or D-FRC.

The People's Choice Award Winner was selected by the voting public, while the Fu-Tung Cheng Award Winner was chosen by Fu-Tung Cheng, founder of Cheng Concrete and Cheng Design.

Cheng picked Jonathan Seaman's Integral Guitar Sink as the Fu-Tung Cheng Award Winner. Made for a music venue, the Guitar Sink has a bowl in the shape of a guitar and utilizes a custom-fabricated, retro-style microphone as a faucet fixture. Crafted with Cheng D-FRC in a custom color, the Guitar Sink measures 8 feet by 3 feet with a 6-inch drop edge and weighs nearly 400 pounds. Other than Cheng D-FRC BackingBlend, the oversized integral sink requires no reinforcement. Jonathan's company, Infistone Concrete & Design, located in Lexington, Ky., specializes in concrete kitchen countertops, bathroom vanities, integral sinks and concrete furniture for both residential and commercial environments.

Runner Up for the Fu-Tung Cheng Award was Chris Ossenfort of Dallas, Texas, for his entry, Kitchen Dining Table — Walnut & Concrete, a DIY project made with a solid walnut slab and Cheng Countertop Pro-Formula in Stone color.

The People's Choice Award Winner went to Zebrawood Vanity and Sink by Andrew Seaman of Frederick, Md. Part of an 18-month home remodel, the integral ramp-sink vanity was made by Andrew for a half-bath with Cheng Countertop Pro-Formula in Charcoal.

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#### People's Choice Award Winner

Zebrawood Vanity and Sink, by Andrew Seaman Concrete Mix: Cheng Countertop Pro-Formula Color: Charcoal Project Location: Maryland

#### Fu-Tung Cheng Award Winner

Integral Guitar Sink, by Jonathan Seaman Concrete Mix: Cheng D-FRC Color: Custom Project Location: Kentucky





#### People's Choice Award Runner Up

Johns Residence, by Jelsson Batista **Concrete Mix:** Cheng NeoMix Original **Color:** Charcoal, Ocean **Project Location:** Florida



People's Choice Award Runner Up "The Curve," by Greyscape Studio Concrete Mix: Cheng D-FRC Color: Mohave Gold and Custom Project Location: Colorado



Fu-Tung Cheng Award Runner Up Kitchen Dining Table — Walnut and Concrete, by Chris Ossenfort Concrete Mix: Cheng Countertop Pro-Formula Color: Stone Project Location: Texas



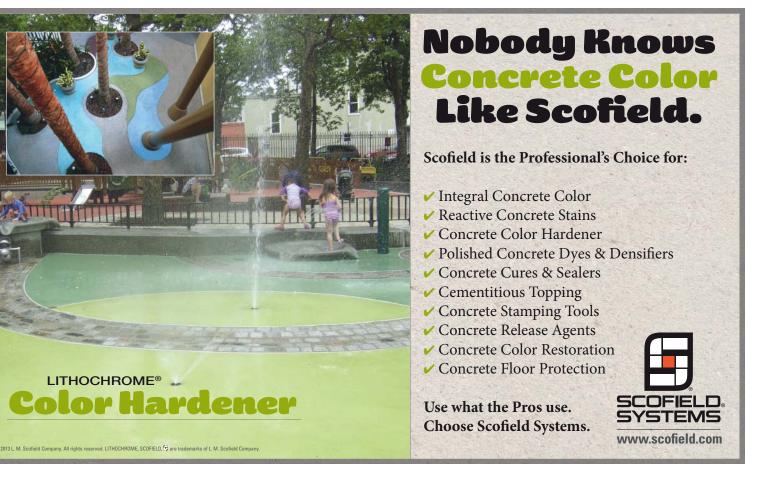
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**INDUSTRY NEWS** 

Decorative Residential Bedsworth Residence, Grain Valley, Mo. Bedsworth Family, Bakken Construction, Show Me Ready Mix LLC

## Kansas City area concrete trade group announces winners of annual awards

The Concrete Promotional Group of Greater Kansas City has announced its annual Excellence in Concrete Awards. The awards recognize outstanding work in concrete construction in the greater Kansas City area, comprised of parts of Missouri and Kansas.

CPG is a nonprofit trade association that represents the concrete industry and promotes quality concrete construction.

Among the awards are several recognizing decorative and architectural concrete work.

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Fountain/Monument

Santa Fe Streetscape Fountain & Reflecting Pool, Olathe, Kan. City of Olathe, Kan., O'Donnell & Sons Construction, Continental Pools, Downey Foundation, Nate Apple Concrete, Geiger Ready-Mix Co. Inc., Olsson Associates



#### **Decorative Commercial**

District 39, Kansas City, Mo. Price Development, Concrete Concepts, Geiger Ready-Mix Co. Inc.

Not pictured:

#### **Polished Concrete**

West Elementary School, Independence, Mo. Independence School District, George J. Shaw Construction Co., J.E. Dunn Construction Co., Fordyce Concrete Co. Inc., ACI Boland Architects, Bob D. Campbell

#### **Concrete Home**

Timshala House, Olathe, Kan. John Gillis Architecture, A.R. Homes, Geiger Ready-Mix Co. Inc.

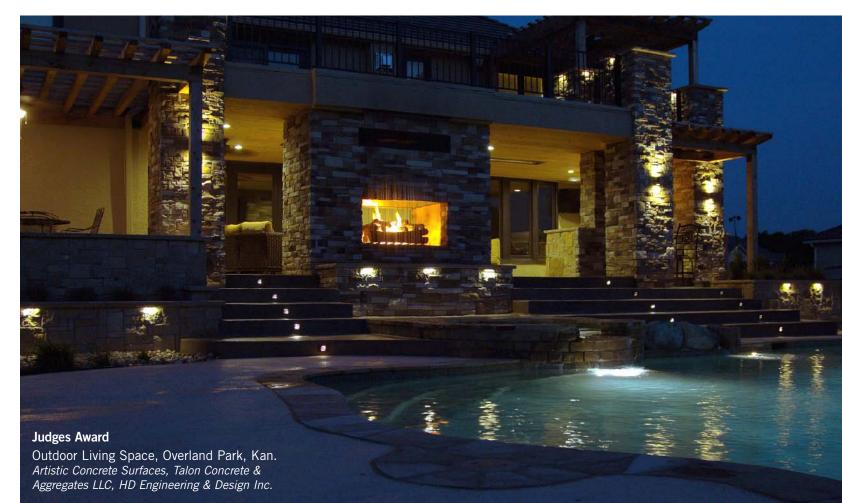
#### **Residential Flatwork**

Leavitt Residence, Leavenworth, Kan. Leavitt Family, Henry Contracting LLC, Geiger Ready-Mix Co. Inc.



**Countertop/Furniture** Exposed Aggregate Countertop, Olathe, Kan. *Artistic Concrete Surfaces, Talon Concrete & Aggregates LLC* 

#### **INDUSTRY NEWS**





#### Restoration

Cambridge Square Apartments Pool Deck, Overland Park, Kan. Fogel Management Group, Cambridge Square Apartments, Artistic Concrete Surfaces



**Bridge Restoration** Creamery Bridge, Osawatomie, Kan. *Miami County, Kan., PCI Roads. Pfefferkorn Design & Construction, Geiger Ready-Mix Co. Inc., H.W. Lochner* 

#### Not pictured:

#### Entertainment

Kansas City Zoo Penguin Exhibit, Kansas City, Mo. Kansas City Zoo, J.E. Dunn Construction Co., Fordyce Concrete Co. Inc., Bowman Bowman Novick Inc., The Portico Group, Leigh & O'Kane LLC

## Polishing machine maker Innovatech acquired by Bartell Morrison

Bartell Morrison Inc. has purchased Innovatech Products and Equipment Co. The new owner intends to maintain Innovatech's manufacturing, sales and distribution capabilities in Everett, Wash.

Innovatech is one the largest suppliers of surface removal equipment in the world. The company offers a full range of floor removal equipment, grinding and polishing equipment and associated tooling. Innovatech has been designing, developing and manufacturing surface preparation equipment for more than 20 years.

Bartell Morrison, a manufacturer and distributor of concrete finishing and surface preparation equipment based in Mississauga, Ontario, now has manufacturing, assembly and warehouse facilities positioned in Canada, on the East and West coasts of the United States and in Europe.

- 😯 www.bartellmorrison.com
- 🚯 www.innovatechproducts.com

## Portland Cement Association predicts cement consumption increase in 2014

In its latest forecast, the Portland Cement Association (PCA) predicts 2013 cement consumption will reach nearly 80 million metric tons, a 4.5 percent increase over 2012. Consumption levels will hit 86 million metric tons in 2014, an 8.1 percent yearover-year gain.

NEW 9692

Melissa Conrad, marketing coordinator, W. R. Meadows Inc.

**Jennifer A. Faller,** national account director, representing the UltraFlor system, Diamatic USA

Jacob Gave, P.E., civil engineered sales representative, Cemstone

Leanna Hudson, stocking distributor, Runyon Surface Prep Rental & Supply

Henrik Rosencrantz, president and CEO, Adaptive Concrete Innovations

**Kevin Ross,** operations manager, Life Deck Coating Installations

During 2014, it is possible that all sectors of construction will show growth residential, nonresidential and possibly even public. While the growth will be broadbased, half of it anticipated for 2014 will come from residential construction activity where there is the largest amount of pent-up demand. The commercial and institutional sector will contribute another 25 percent.

The PCA predicts real construction spending will grow 1.3 percent in 2013 and by 8 percent in 2014. However, growth in U.S. construction markets could be dampened by congressional drama that erodes consumer confidence and hinders recovery, said Edward Sullivan, PCA group vice president and chief economist, in the forecast. "Each time the political circus on Capitol Hill addresses extensions of the debt limit, budget approvals or the fiscal cliff, it harms the burgeoning economic momentum."

By 2018, the end of the forecast horizon, portland cement consumption is expected to reach nearly 119 million metric tons — roughly 3 percent below the past cyclical peak in 2005. This implies a 14-year recovery.

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# **zõz²ä** calendar

#### H¶Úqä¶%ã6¶²gĺźæ

Jan. 20-24, Las Vegas, Nev.

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March 11-15, Tuscon, Ariz.

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# New "Amazing Overlay is touted as being crack-free

Elephant Armor is shot onto the side of a foam-constructed training facility at Fort Stewart, N.C.

Photos courtesy of GST International Inc.

#### by John Strieder

G ST International Inc. is best known for its concrete cleaners and sealers, but the company has been working on developing the ultimate cementitious overlay for a decade and a half. They think they've finally cracked the case.

GST is billing Elephant Armor as "The World's Most Amazing Cementitious Patch and Overlay Product."

The overlay is not polymerized. Rather, it's a one-component mix fiber-modified with PVA fibers — a lot of them. GST has engineered a mortar that holds an unusually large amount of fibers and allows them to be dispersed evenly throughout the mix. It's also very flowable, making it easy to work with.

Most impressively for decorative contractors, Elephant Armor allows seamless floors without expansion joints. It can be finished, it's pigment-friendly, it holds texture well, and it eliminates the need for repair grouting on restoration jobs. Elephant Armor is available in three variations: Mortar, Asphalt Patch and DOT Industrial Grade. Because the mortar works well as a finished stampable overlay, it will be repackaged and launched as a fourth product in the spring.

GST technical services director Thomas Martin says he did his homework. "ASTM



Replacing a failed stamped overlay on a utility access door for the Roseville, Calif., city hall.

testing was conducted for shrinkage, strength both compressive and flexural, abrasion resistance, ductility, shear strength, freeze-thaw and heavy salted highways the results are phenomenal!" he boasts. "The versatility of this product is unmatched. The viscosity of the product can simply be adjusted with the addition of more or less mixing water. This allows for one product to be both a permanent patching material or an overlay. It can even be mixed and applied with a peristaltic pump for difficult vertical spraying applications."

As Martin says, Elephant Armor is a justadd-water bag mix. Its consistency changes with the amount of water added. Among other things, this frees it to function as both a horizontal and vertical overlay.

The overlay doesn't require joint cuts because it is practically crack-free, thanks to the ductile mortar and large amount of fiber. The company claims the mortar has *(Continued on page 16)* 

# **Testimonials from the Field**

Bruce Gesick, owner of Gesick Concrete, based in Sacramento, Calif., has been helping the GST International team research and develop the Elephant Armor overlay. On one recent test, he was able to finish a half-inch application with a riding trowel.

'm a flat-floor laser-screed guy, so we were trying to do a hard-trowel finish with the Elephant Armor and actually put large machines on it, even riders.

It's very unusual for a micro-overlay to support the weight of a machine. Most of them are polymer-cement based, and they tend to want to pull real easy. We were able to hard-trowel and even machine Elephant Armor. We probably could have done it to a fuller extent if the temperature wasn't 20 degrees. We were even able to put a 10-foot rider on it.

What I'm looking at being able to do with Elephant Armor is a large-scale floor, similar to what we would be able to do with the laser screed — 20,000, 30,000, maybe 40,000 square feet. We want to go in, place and finish it, and be able to give clients a seamless slab because we didn't have to saw-cut it.

Saw cuts are typically a big negative in warehouses — high-production industrial facilities or facilities with a lot of forklift traffic — and that's typically the type of job we do. There are a lot of older structures out there, big tilt-up warehouses where the slab needs to be refurbished. Being able to put Elephant Armor down without tearing anything out, and not having saw cuts in it, has a future.

There would be no problem with using a bubblegum release on it and stamping it if you wanted to. It's cementitious-based, and it's a little better of a surface to work with than polymer cement. It does have a lot of fiber in it, which makes it unique to work with, but it's not like polymer cement where you almost have to



put water on it almost every time you trowel it.

Also, we sounded the floor to check for delamination and I didn't detect any issues.

Mark Bodenhamer, vice president of sales and procurement at Spec-West Concrete Systems in Sacramento, Calif., sells Elephant Armor at his stores. It's priced just a little higher than competitors because of the technology involved, he says.

We patched asphalt with Elephant Armor, including an area with a transition from concrete to asphalt. The asphalt we patched was alligatored and nasty. Now, we have forklifts running over it, tractor-trailers running over it. It's just holding up like a mother.

There really isn't anything similar. This stuff just does not crack. It's close to amazing.

We could have used an asphalt cold patch that would last six months to a year. The Elephant Armor has only been down for three or four months and we don't have freezethaw in Sacramento. But it's been holding up really well.

One of my guys yesterday took a bag and made a slab a little less than 1/2-inch thick. It's sitting on top of four 5-gallon buckets. Just for giggles I stood on it and it bent substantially but it didn't crack. Pretty cool.

It holds texture better than anything I've ever seen. It's a little on the furry side but that's only visible if you're right on it. The fiber just kind of blends in. In fact, you really have to look for it.

One Elephant Armor patch was put down with just a roller. We didn't really finish it or anything. It has little ridges on it. Most patches, if they have ridges, you can kick them off. Well, you'll ruin your shoe before you get one of these ridges off. I know because I have a gash in my shoe.



## HIGH PERFORMANCE CONCRETE COATING SYSTEMS

Arizona Polymer Flooring is a respected name in the concrete coatings industry, known for our expertise, technology and integrity. We stand by each of our flooring products and concrete coatings systems, and are sincerely focused on building long-term relationships.



#### PRODUCT NEWS

#### (Continued from page 14)

500 times the tensile strain capacity of other cement-based products. It offers great flexural strength too, applied as thin as 1/4 inch.

The overlay may find friends among repair and restoration specialists. The mix settles over surface flaws in one pass without ghosting cracks or flaws. Once the damaged concrete is cleaned and primed, the semiflowable Elephant Armor will lock into the nooks and crannies itself, eliminating the need for repair mortar.

And it offers high strength early, with the repair products achieving final set in less than two hours.

The highly cementitious mix accepts any and all colorants. If any PVA fibers fuzz out of the surface, they can simply be burned off. It even resists de-icing salts and freeze-thaw damage.

A 50-pound bag of Elephant Armor will retail for roughly \$35 to \$50 a bag, with the DOT mix being more expensive than the other two. Dealers will get the bags for \$25 to \$30. It's also available in 10-pound buckets.

The material will be sold nationwide, including at the Menards home improvement store chain.

The CST team stumbled across the right formula for their mortar by accident two years ago after a decade of trial and error. They're patenting the system.

They've also been field-testing it all over the world in the past couple of years, reporting positive results in several locations, from repair patches on a highway in Utah and a runway at Los Angeles International Airport to horizontal and vertical repairs at an aqueduct in Nevada.

Finally, the new overlay even has applications in furniture. GST is working with two nationally known furniture designers, Janna Phillips and Braden Richter, to develop foam-core Elephant Armor-coated lines for outdoors.  $\checkmark$ (888) 898-8181

(\$) www.gstinternational.com





**Above:** Spraying on a trowel aid for a full-depth repair of an active runway at Los Angeles International Airport.

**Left:** The repair after the work is done, with curing compound visible on the patch surface.





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#### ADMIXTURES

## NewLook introduces admixture that prevents efflorescence formation

NewLook International Inc. has unveiled EffLock, a unique admixture for concrete and masonry that permanently stops efflorescence.

EffLock reacts when hydrogen is present and stops reacting when the concrete mixture dries. EffLock is designed to react again each time the concrete gets wet, preventing the formation of efflorescence for the life of the concrete. NewLook claims EffLock also improves the performance of densifiers and penetrating sealers. It binds contaminants and other salt-based minerals that can inhibit a penetrating sealer's ability to absorb and react.

EffLock is available in liquid or powder admixture form as well as a topical spray for existing concrete and masonry surfaces.

www.GetEffLock.com

## Finishing aid wins notice from architectural magazine

Lythic Solutions' new DAY1 Finishing Aid has won the 2013 Product Innovation Award given by Architectural Products Magazine. A double-performing product that both improves concrete finishing and boosts the long-term performance and durability of the slab, DAY1 won in the Concrete and Masonry category.

DAY1 is sprayed onto fresh concrete as it is being placed. It slows moisture evaporation and makes the slab surface more workable without weakening concrete the way added water does. DAY1 extends finishing time by 15-45 minutes, helping prevent "lost" finishes due to premature set. It makes the surface denser and harder, improving long-term durability. It also slows vapor transmission and moisture movement through the hardened slab, extending curing, reducing curling, and



reducing moisture-related problems.

DAY1 is distributed in North America through the Solomon/Brickform network. It is sold as a concentrate.

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#### FORMING

## Crete-Lease release agent leaves a finish free of bug-holes

Crete-Lease 880-VOC-Xtra release agent is an ecofriendly formulation that maximizes visual impact, mimics form surfaces and exceeds VOC regulations.

Crete-Lease 880-VOC-Xtra provides easy and stain-free clean stripping of forms and form liners from concrete. The result mimics the surface of molds and site amenities for a superior finish without bug-holes. When applied properly, it eliminates concrete buildup.

The release agent will not stain or stick from heat curing, and it doesn't interfere with adhesion of caulk, architectural coatings, paint, sealers and curing compounds on cured concrete surfaces.

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#### GROUTS

#### High-strength grout from ChemMasters

ChemMasters Inc. has introduced a new enhanced-strength, nonshrink, nonmetallic construction grout.

Gorilla Grout is ideal for use in high-compressive strength applications without the "creep" associated with epoxy grout formulations. Plastic and flowable compressive strengths exceed 10,000 psi at 28 days (as tested with the ASTM C 109 2-inch cube test). The enhanced-strength grout features controlled expansion and meets ASTM standards C-1107 and CRD-C621. It is well-suited for hightolerance placements that require maximum load-bearing capacity. The grout can be placed with standard equipment at high fluid consistency.

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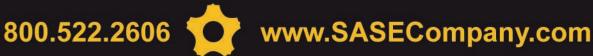
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#### POLISHING

## New meter measures concrete surface texture

Adaptive Concrete Innovations has announced the industry's first measurement device for reading concrete surface texture.

The T Meter is capable of reading concrete texture in three parameters:



STG (surface texture grade) as described in CSDA Standard ST115, RA (roughness average), and CSP 1-6 as ICRI-defined parameters of concrete surface profiles. The T Meter is affordably priced, mobile and easy to use.

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#### **Gloss meter assesses several angles**

Gardco has introduced the Novo-Gloss 20/60/75° gloss meter. The meter is able to simultaneously measure using 20-degree, 60-degree and 75-degree geometry. The constant read feature allows a quick and easy assessment of the gloss level on large surface areas, and autoranging measures matte to mirror finishes. With the Novo-Gloss 20/60/75° gloss meter you can download, analyze and store readings in Novo-Soft quality control software.

- (800) 762-2478
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#### Edge grinder with two-head option

Kut-Rite Manufacturing Co.'s new edger, the KRazor EDGE, brings many of KutRite's grinding and polishing innovations to concrete floor edging — and include single and twin heads.

The KRazor EDGE takes the contractor off hands and knees when grinding and polishing the edges of a floor. The twin heads feature includes the type of groundbreaking technology seen in the Conquer Twin, KutRite's massive 910- pound grinding and polishing machine. Using similar engineering concepts, the KRazor EDGE's twin-headed option will grind and polish a 14-inch path at the edge of the floor. The single head sports a 7-inch cutting path. The grinder's head will rotate to as much as 73 degrees to stay flush with the wall.

The KRazor EDGE also offers all of the unique advanced options of its predecessor, the EDGEKutter, including a T-handle that is ergonomically designed. Its rocker pivot suspension enables the KRazor EDGE to float over any floor's undulations.

The KRazor EDGE can use of a 5/8-inch-11-thread cup wheel or 7/8-inch smoothbore wheel while edging. The twin heads offer contractors the ability to opt for one grit on one of the heads while using a different grit on the other plate. (C) (734) 955-9311

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#### SHOTCRETING

## Blastcrete releases attachment for gunite shotcreting

Blastcrete Equipment Co. has released the H-020 gunite attachment, giving shotcrete contractors a powerful rotary gunite machine that attaches easily to any skid steer, requires less compressed air, and saves space on job sites.

The easy-to-operate machine delivers precise material control. The hydraulically powered H-020 is equipped with Blastcrete's "Genuine Piccola" single-point, self-leveling clamping system that ensures simple operation and minimal maintenance. The unit is equipped with a universal mounting plate for attachment to skid steers. It also features pockets so users can transport it with a forklift.

While other dry-process shotcrete gunning systems typically require three to four adjustment bolts to seal the rotor section, the H-020 requires just one. The H-020 requires a skid steer or other hydraulic power supply to deliver 10 gpm at 1,500 psi to operate at maximum speed.

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#### SPRAYERS

#### New gravity-fed spill-free sprayer

The vFan Gravity System from Preval is a portable spray system that delivers liquid mediums or coatings — paints primers, glues, stains — while allowing the user to fully control the flow from a 1/16-inch fineline detail to a 3-inch fan pattern on small surfaces.

The spray system delivers color with no adulteration or tint changes. With the vFan Gravity, gravity itself acts as a siphon for the product, but unlike with other comparable gravity-fed airbrushes, the medium is securely contained within the cup using a threaded lid. This means that no matter how the vFan is held, the paint will not spill out. The dual-action system is designed to be powered by compressed air and works with any standard pneumatic power source. The unit is compatible with solvent or water-based products.

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JNITEC

# Stepping up from Decorative Concrete to General Contracting

#### by Doug Carlton

ET's start with a few questions and then a challenge. Where do you see your business this time next year? What about the year after?

Are you content with installing decorative concrete countertops, overlays and stamped concrete, or do you have what it takes to rise to the occasion?

For me the next step was a transition from running a typical decorative concrete business in California to a new venture in Wyoming: constructing new homes and buildings that include decorative concrete as a large part of their design and function. This fresh idea is one I strongly encourage each concrete professional to consider.

The building industry is competitive, whether we're talking about new home construction, remodeling, pools or light commercial. But many years ago I made an interesting observation that few in the building industry use to their advantage. The type of person attracted to decorative concrete is usually willing to invest more money in their project. They are also less likely to focus on price and more likely to choose a builder familiar with attractive new trends that include decorative concrete.

Decades ago I used a similar trend to transition from structural concrete to decorative concrete. I found it takes the same relative effort to broom a natural gray driveway or patio as it does to texturestamp, but the profit increases by an average of 20 percent to 30 percent. Plus, there is much less competition in decorative stamped concrete.

Flashing forward to today, the same opportunity exists but on a much larger scale. This opportunity can work in your favor beyond what most decorative concrete professionals can imagine. Today's mid- to high-priced homes no longer have just a small stamped entry or porch like a decade or two ago. They now have decorative concrete finished floors, concrete fireplace mantels, and concrete countertops — even decorative concrete fixtures and furniture. The same goes for many high-end commercial projects too.

A perfect example of this is a house my company just finished. This home is about 2,000 square feet with a build-out cost of about \$280,000. Of this cost, the decorative concrete portion is more than 20 percent, or about \$55,000. With so much of the home cost and design built around decorative concrete, why would anyone but a decorative concrete professional construct the building?

#### Some will find it challenging to move from a **hands-on position** to one of **supervision** and **organizing.**

Exposure is what propels a growing trend, and our decorative concrete industry is no different. Folks now gravitate to the appealing nature of decorative concrete artistry. They are amazed how a piece of concrete can be individualized to a person's taste and décor. Few other construction mediums have the same appealing flexibility as decorative concrete.

This trend also goes beyond appeal. Folks today are consciously using practices that consider longevity and sustainability. This dovetails perfectly with our decorative concrete industry.

So the question remains: How does a company now offering decorative concrete services transition into a general contracting firm? A soft entry could be as easy as a remodel or room addition project. Maybe moving beyond installing stamped pool decking to building the entire pool could be an option. Regardless, this opportunity is as vast as your willingness and effort to promote this new trend.

#### **Building a team**

Honestly, few among us have the experience or knowledge to build a project from start to finish. This is why it's important to surround yourself with a team of professionals who understand the importance of protecting a decorative concrete floor while building a structure around it. You as the primary builder will take control to organize, communicate and implement the steps necessary to successfully complete a building project. Learning how all the trades come together will take time but be well worth the effort over the long term.

Some will find it challenging to move from a hands-on position to one of supervision and organizing. This change, too, will come with time as your daily activities change along with this new business structure. I personally have found it beneficial to play an active part in the project's design phase in order to make sure decorative concrete fits nicely with all the other project features.

#### Profitability

The fact is, you can be one of the best in any industry yet still not be profitable. Playing a major role in a remodel or new construction project provides the best opportunity for profitability. Profit is no accident. Profit is the result of preplanned effort combined with skill. Proper planning and organization will condense a completed project from six months to four. As the primary or general contractor, you have the opportunity to create and build efficiently.

We mentioned earlier how competitive the building industry can be. This competitiveness is less pronounced in decorative concrete, because project owners who desire it as part of their new project's design are typically less concerned with cost. The fact that you have the talent capable of meeting this need is advantageous, not to mention potentially profitable. For years, builders unfamiliar with decorative concrete have tried to hold the market back by dissuading customers away from our industry. This dissuasion is no longer possible thanks to the advancing effort from decorative concrete professionals worldwide.

#### What will you have to change?

Below is a list of significant aspects of your business that you need to consider as you contemplate making a change from subcontractor to general builder. I found some items, like cash flow for instance, became less complex since my firm could control the flow of money. The costs of other items, such as liability insurance, increased but were easily absorbed part by part into each project.

- Contractor license requirements in your state or city.
- Bonding and liability protection (insurance).
- Cash flow.
- Branding or business name change.
- Fresh marketing plan.
- Education.

Doug Carlton is working on his third decade in the decorative concrete industry. He's the owner of Carlton Construction, located at the base of the Big Horn Mountains in northeastern Wyoming. Doug can be reached at carltondoug@sbcglobal.net.

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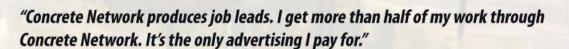


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# Three Critical Components to Effective Marketing

by Jacob Webb

WISH marketing a decorative concrete business were like elementary math. Alas, it's much more challenging like hypercomplex algebra where you're constantly trying to solve for X without most of the necessary decision-making info. You can get tripped up on a lot of stumbling blocks.

Let's take a look at three critical challenges to marketing your business effectively and how you can resolve them.

#### Sourcing growth capital

Despite the sluggish economy, most decorative concrete contractors are focused on growth. But if you are like most small-business owners, you probably lack sufficient resources to expand your customer base. In fact, you're probably caught in a cycle of using the revenues from your next job to cover the expenses from your last job — leaving no cash flow to fund an essential marketing program. Raising funds can help you overcome this battle.

But therein lies the challenge. Banks are not willing to loan like they used to. Riskcapital investors (e.g., angels or venture capital firms) expect high returns and a quick exit. And even a direct public offering requires about \$25,000 to prepare a prospectus and file with your state. Do you have \$25,000 lying around? Probably not. And chances are your friends and family don't either. Instead, consider using a private placement to raise needed funds. It's a process of selling equity shares to a select group of (accredited) investors who earn at least \$200,000 or who are worth \$1 million. You're responsible for finding these investors, but you can enlist the help of a broker. This process sounds complicated but it's a lot more common that you might think. More than \$80 billion was funded in 2012 using private placements.

While private investment capital is not right for all small businesses, a number of benefits to this approach make it worth considering. For example, private placements are less expensive than public offerings and they typically happen faster. Also, private investors tend to be more patient than venture capitalists or bankers.

What's required? Your decorative concrete business should be established and generating relatively predictable cash flow to demonstrate viability to private investors. You'll need a professional business plan, a private placement memorandum that discloses the investment risks, and a lawyer experienced in private placements.

An option for raising smaller sums of money is donation-based crowdfunding websites such as Kickstarter. Creating an account is free. You post a video about your decorative concrete business concept and offer token rewards (e.g., T-shirts or



coupons) to encourage people to invest in your business.

Kickstarter would be a good solution for decorative concrete contractors because its relatively younger and geekier audience tends to be rather creative. Since its launch, more than \$814 million has been pledged by nearly 5 million people. Using this strategy would not require an attorney or complicated legal documents — just a decent video and a compelling argument about why someone should donate money to your campaign.

Your pitch might sound like this: "I'm a starving contractor looking for \$4,500 to pay for needed project materials. Here is the architects' project illustration. See? Helping me complete this project will allow us to make a big impact to the décor of this city." Crowdfunding is more successful when you clearly communicate how much you need, why you need it and what impact it will make on your business and the community.

#### **Generating referrals**

Referrals are very important. Inherently, they communicate and establish your business' credibility. They reinforce your value proposition (to prospective customers) and legitimize your marketing efforts. By their very nature, referrals justify your brand position within the marketplace. More referrals mean more business.

Despite their significance, referrals do not come cheap. Decorative concrete contractors often forget to look at referrals from a customer's point of view: "I know referrals are important to you, but what's in it for me?"

Customers might feel they have a lot to lose in referring your business. Even if you've never given them a reason to doubt your ability, there is still a risk you might screw up. Customers know that. And they're aware their own credibility is on the line with their friends.

The most important thing you can do to get referrals is to be worthy of them. This goes beyond providing a quality product. It includes integrity, customer service and appropriate service offerings. Inspiring confidence is the minimum requirement for getting referrals.

Create a referral exchange program with complimentary service providers. Once you've identified your strategic focus ("I am the go-to guy for restoring concrete driveways!") refer all other opportunities to partner service providers in exchange for a referral fee.

Include a "referrals appreciated" starburst on your email signature, website, sales collateral, ads and newsletters. (You ARE sending newsletters, right?) Offer a guarantee or affiliate program. Update your social networking profiles. If otherwise happy customers don't want to refer you, create alternative ways for them to contribute, such as project profile write-ups and testimonials.

#### Developing a marketing plan

A marketing plan — specifically, the market research that goes into developing the plan — is your map or North Star for navigating the competitive landscape. It's a decorative concrete contractor's guide to marketing success. Private investors will ask to see it. The problem is that developing an effective plan takes time and effort. You must prioritize.

I've found that most decorative concrete contractors are not even aware of the key elements that should be included in a marketing plan. Let's examine them here.

Identify your target market. Provide market research that justifies the niche focus you're going to attack. Explain why your customer needs your service. What are the "pain points" that your service will address? How would you profile this customer base?

Describe your product — in your case, your decorative concrete service. What makes it unique? Why is it a good fit for your target customer? What makes it valuable?

Spend some time examining your competition. Distinguish between your direct and indirect customers. How is your competition positioned within the market?

Write down the marketing strategies you intend to use to communicate your brand value to customers. This may include networking, websites, press releases, training programs, direct marketing, trade shows, personal selling, articles and advice columns, or advertising.

Use pricing to expand your product section. Price can be used to position your service in the minds of customers as a value or premium product.

The budget section should demonstrate how you intend to cover the cost of your marketing plan.

No plan is worth anything without specific goals. Set realistic, quantifiable goals — for example, we will have 20 new customers by the end of next quarter, our business will receive 30 new leads from our ad campaign, etc. Goals may include sales, customer satisfaction levels or the number of new customers.

Jacob Webb, MBA, is a small-business strategy consultant and co-founder and vice president of NewLook International Inc., where he is primarily responsible for business development, sales and marketing. Reach him at jacob@getnewlook.com.



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# Six Fresh Ways Decorative Concrete Contractors Can Sell Themselves

by Vanessa Salvia

N o matter what industry you're in, whether it's massage therapy or decorative concrete, you have to consider yourself to be in sales. People need to think of your product over other products when they are given a choice. Joining your local Chamber of Commerce, advertising online, or becoming a member of a construction trade group are smart traditional marketing strategies. However, there are less obvious ways to enhance what you might already be doing for marketing and take some new tacks to reach your target audience.

We spoke with experts in the commercial, industrial and residential concrete market to uncover new ways to get the word out about your business.

#### 1. Put your portfolio on a tablet

For decorative concrete, visual marketing strategies will do the most good. Michelle Radley, co-owner of New Jersey-based JM Lifestyles, knows the importance of having a portfolio. "I would carry it around with me because I would be somewhere socially and people always ask, "What do you do?" she says. "If you just say 'I do concrete' that doesn't conjure up the right image necessarily, so when you are able to show them, a light goes on for them."

Jacob Webb, vice president of decorative concrete product maker NewLook International Inc., has noticed that increasing numbers of contractors are utilizing iPads rather than physical portfolios, particularly on the West Coast. "Contractors on the West Coast tend to be a little more tech-savvy," Webb says. "I never see a contractor in the Midwest carrying around an iPad."

Utilize this to your advantage. If you're looking to attract more high-end clients, try embracing technology and put your brag book onto a portable electronic device like an iPad. It conveys a modern outlook and gives you an edge with clients who are looking for up-to-the-minute style.

If your spouse or receptionist is a social person with a lot of friends, why not hook them up with a portfolio too? "All the contractors know they need to showcase their work," says Webb. "If their wife or their receptionist is a viable source of business then absolutely they should have their own portfolio. That would definitely be creative."

## 2. Make best use of your showroom and networking opportunities

You have a showroom, right? According to Jacob Webb, most decorative concrete contractors don't. "Some people don't even invest in the development of a showroom," says Jacob Webb. "Before talking about how to use your showroom, we first have to emphasize the importance of *having* a showroom."

So, if you have one you're already a step ahead. Now, think of ways to work it to its maximum potential. Michelle Radley's New Jersey business is located 40 minutes outside of New York City. She has access to a lot of networking opportunities and she takes advantage of as many of them as possible. "We do a lot through the American Society of Interior Designers and National Kitchen & Bath Association," she says. "We're members but not designers — they have associate memberships for vendors and other people in the industry."

Radley says they also partner with some big-brand appliance companies such as Viking Range. "A lot of times they have networking events or food tastings or promotions," Radley says. "We'll go anywhere that attracts people interested in those kinds of things, because you never know."

Not everyone is going to have access to the networking potential of America's most populous city, so create your own networking events. Host monthly breakfasts with bagels and coffee or monthly afterhours events with wine and snacks. Invite designers, architects, builders and anyone in your industry to visit your showroom and see your work. "Then you become your own hub, your own community for networking," says Radley. "I encounter architects that are like, 'Oh, I've never used concrete before. I've heard of it but I'm not sure I want to use it.' Hosting people gives them a comfort level for getting to know someone who's doing decorative concrete, and they can touch it and see it."

Jacob Webb also stresses the importance of developing relationships, and your showroom can be the strength that those relationships are built on. "It's a great idea and I don't think that contractors do that one enough," Webb says.

#### 3. Market your specialties

"There is such a variety of applications in concrete," says John Norton, president of Preferred Global, a flooring contractor in Indianapolis. "Different people and craftsmen have different strengths, so this requires people to either specialize in their strength or have a staff deep in talent."

If your city is saturated with various levels of experience and skill, calling attention to your specialties will help you stand out. "We have to set ourselves apart from other mom-and-pop shops and from people who claim to have the same skill level that we have but don't necessarily," Norton says. "It requires a specialized talent to provide the look for the customers. We like to say the more difficult or complex the better, because it eliminates the people who can't perform."

For Michelle Radley, her best clients come from repeat business or referral business. "If they're not happy then that's not going to happen," she says, "but in order for someone to be happy, you have to be as upfront as possible about what your strengths are and what you can actually do."

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"We did a **case study** on the various types of work we did at Sun King Brewery, and that's something we can **send to other people** who are opening up distilleries or breweries in other parts of the country."

- Erin Webb, marketing manager, Preferred Global

As with showrooms, Jacob Webb says, in his estimation most decorative concrete marketers don't have a written marketing plan to focus them on their strengths.

"A lot of contractors have a vision they all see themselves as the best, they all see themselves dominating their market. Remaining focused presents itself as more as a challenge in a down economy," he says. "Marketing 101 is, you identify your strategic target market and develop that, and only when you've saturated that to the best of your ability do you move on. Otherwise you spread yourself too thin."

Webb says that contractors can be more successful if they develop a strategic focus on a type of work or even a specific product line. "Then there's a perpetual investment in their own personal brand. You could be the type that says 'I can be anything to everybody,' or you could be the contractor who says, 'I'm the guy who is known for faux finishing basement floors and if you've got a pool deck, I'm not your guy, but I do know people who do that.' Those are the contractors who get the work they want."

Webb acknowledges that it's difficult to say no to jobs when times are tough and you need cash flow. So counter that by charging a premium price for the work you do better than anyone else. "If as a decorative concrete contractor you've established yourself as the go-to guy for a specific application, then you effectively prepare your customers to pay a premium."

#### 4. Do multichannel marketing

Erin Webb, Preferred Global's marketing manager (and not related to Jacob Webb), says she hits her potential clients with several different types of marketing: direct mailers, emails and follow-up phone calls. "It's about hitting them from every angle and getting in front of them," she says.

Preferred Global provides commercial and industrial flooring and painting

solutions to businesses such as breweries, large retailers and food manufacturers. Because they can work nationwide, they develop case studies for jobs they do to help them find similar work. For instance, they have done successful jobs for breweries, so they utilize their case studies to pitch work to other breweries or related industries.

"Traditional ways are direct mailers or telemarketing cold calls to businesses based on an area we want to target," Erin Webb says. "Or if we've sent out a mailer we'll follow that up and contact them by phone to see if they received that info and if they need our services." She says Preferred Global implemented a CRM (customer relationship management) tool last year, which helps them email or send mail to their entire customer base and network at trade shows.

Reaching out to businesses with multiple locations is another growing focus, she says. They complete a job at one branch, then contact the others directly. "We know they have a location in (for example) North Carolina or Alabama, so we want to target those people and get their plant manager the information. We let them know we're doing work at this other facility and we'd like to know if they have anything that they need done in their facility. They can talk to the plant manager where we are doing the work and if he personally compliments our work. That allows us to build a relationship and do work for them as well."

#### 5. Do samples

Erin Webb says Preferred Global contacts potential customers and offers to do a test patch. "Then they can see a small area of what the product is going to look like on their floor," she says. "If they like it they'll be more likely to proceed with the project."

Jacob Webb strongly encourages other concrete contractors to make portable samples. "Something that they should do but aren't doing is invest in physical samples of their work," he says. "It's easier than you might think."

Jacob says to buy thin pieces of wood, perhaps 12-by-12-inch squares, and some microtopping or overlay material. Use that to make samples of your work, and place them in a box in your truck so they are always accessible. "People are afraid of making that investment," he says. "It takes time and resources and a little bit of money to make those samples, but the savvy and sophisticated ones who have done that have seen a dramatic increase in their profitability."

#### 6. Find new uses for decorative concrete

John Norton of Preferred Global says his company's best marketing tool has been to find or create new uses for decorative concrete applications. "That is often done by suggesting an install for a customer and then using that as a generator for other business," he says. "Doing something that's out of the norm and then using that to benefit other customers." His example is a floor and wall installation for a cooler for Sun King Brewery.

Erin Webb incorporates these innovations into Preferred Global's case studies that target a specific market or industry. "We did a case study on the various types of work we did at Sun King Brewery, and that's something we can send to other people who are opening up distilleries or breweries in other parts of the country."

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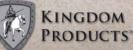
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# ARTISAN IN CONCRETE

# **Richard Winget, Authentic Environments** Huntington Beach, Calif.

#### by Stacey Enesey Klemenc

R ICHARD Winget sees himself as a glorified copycat, an artisan who uses concrete and other mediums to simulate everything from cavern environments, majestic rockscapes and award-winning underwater reefs to rain forests, waterfalls and mountain landscapes.

The owner of Authentic Environments, in Huntington Beach, Calif., Winget has helped create water parks, zoos, hotels, casinos, aquariums and major theme parks all over the world. Before he founded Authentic Environments in 1994, he traveled

as a freelance artist to exotic places including Taipei, Rio de Janeiro, St. Thomas and Hawaii and used his simulating skills on projects there.

"I have had the pleasure of working with, and learning from, some of the most creative minds in the industry," he says, many of whom he has worked with time and time again because few can do what they do. The crews, he says, typically hail from all over the globe and become like family for the six to eight months they are on a job.

Although he still accepts out-of-town commercial gigs from time to time — especially when it comes to zoos — Winget today mainly concentrates on custom residential projects closer

to home in Los Angeles and Orange counties. Much of it consists of elaborate pools for celebrities or sports figures where the rockwork generally costs from \$80,000 to \$150,000 and takes somewhere between eight weeks and a few months to complete.

#### Learning the rocks

Winget first began learning the basics of rock formation and architectural concrete façades doing custom residential jobs in Phoenix, Ariz., while still in high school. When he graduated in 1986, he moved to Las Vegas where he spent two years as a union apprentice crafting the volcano at the Mirage casino on the strip.



The GFRC project, he remembers, was the biggest project of its kind at the time.

Since then, the rock business has changed considerably. "What once was done with rebar benders is now done with AIM (auto industry machinery) or CNC (computer numeric controlled) wire-bending machines, CAD scans and chip technology," he says. He cites examples of this type of fabrication that include the Expedition Everest ride in Disney's Animal Kingdom in Florida and Disneyland's Cars Land in California.

> And even though due to budget constraints most contractors can't always use the latest and greatest technology — Winget still bends rebar by hand in the field — he believes the next generation of scenic and theme workers should learn about the proper methods of operation and steps to follow.

#### **Delving deeper**

Winget's techniques have seasoned since he started in the business. "I used to be all about the carving as a lot of up-and-comers are, but I soon realized that there is a lot going into this work and each step directly affects the next," he says. "Throwing mud onto old tires, sand bags or

Styrofoam is an unacceptable building practice!"

He urges those just breaking into the business to take training classes and seek out veterans who can teach contractors proper techniques. Practice techniques at the shop or in your garage before you do it for pay.

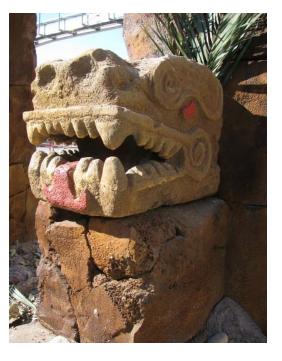
"Follow the large projects and see if you can get hired on," he suggests.

"Take pictures of a rock or tree branch and try to recreate its texture and color. Be a problem-solver. Try new things. Always use several references — don't guess at how something looks. Build yourself a library you can draw from," he says. "Companies









are willing to pay people who can simulate nature."

The commercial architectural façade work he does, Winget says, differs from vertical decorative concrete in that the work is engineered according to detailed drawings and checked by inspectors to make sure standards are met. Although rules vary from state to state, with some having very lax standards or none at all for things such as boulders at the edge of a pool, Winget says he typically builds to meet California's more stringent code. "I always follow California's standard specifications at a minimum," he says.

#### **Simulated environments**

Marrying the artistic trade to the

traditional construction process can be difficult when the traditional contractor strives for a smooth-troweled surface free from imperfections and the artisan behind him wants to carve big cracks in it to simulate seismic activity to help tell the story, Winget says.

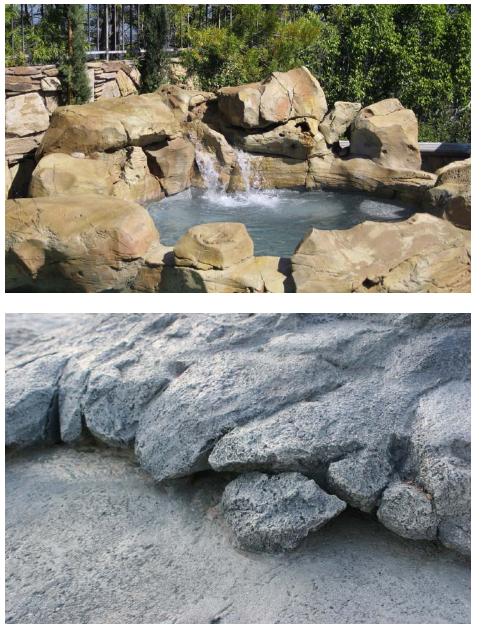
"Try explaining to a block wall contractor that he needs to purposely construct his wall in a crooked fashion so that we can make it look as if it is the only wall that has been left standing after an archeological excavation of an ancient city 1,000 years old," he says. These are the types of challenges faced by those in the business of storytelling through simulated environments.

"Fooling people into believing what they

are seeing is real is how we measure our success," Winget says. But it doesn't stop there. The concrete creations not only have to look real, they also must achieve what they were designed to do.

For instance, in a zoo exhibit some rocks are integrally heated to draw animals to them for comfort and are positioned close to the viewing window so visitors can get a good look at the animals. "Food caches" also bring the animals close to the viewing window. "The food caches are like a deep split in an artificial tree or a deep crack in the rockwork. The location is important and it has to be natural-looking," Winget says.

"Waterfalls, ruins or artificial trees are used as focal points to bring interest, too. The idea is to showcase the animal while





educating the public about them."

Besides looking real and serving purposes for the animals and audiences, rockwork is also used to hide unsightly objects such as special effects equipment, plumbing, electrical, audio and HVAC components. At park entrances and queue lines, rockwork can block unwanted views, lay the groundwork for what's about to come or serve as seating for the weary. For each of these uses, the rockwork must be fabricated to specifications.

#### Manufacturing and training

In addition to running a simulation construction company, Winget also produces a preblended sculptural concrete called Carve-Right that's used in the scenic and theme industry to build trees, rocks and landscapes.

"It's lighter than traditional cement and a little finer and stickier so it stays where you put it," Winget says about the product he introduced in 2010. "We also engineered the lime out of the product, and that greatly reduces the efflorescence problem that has been plaguing us for years."

About three years ago, Winget also began teaching classes where students can learn to build rockscapes and water features from the ground up. "You have to learn proper techniques and then develop speed to expedite the process," he says. "And that's what I teach them."

He says he emphasizes the importance of personal protective equipment, such

as gloves, safety glasses and work boots, and the proper way to lift heavy objects so students' backs don't give out at an early age. "I'm fortunate," he says. "I have all my fingers and toes."

Winget also produces training DVDs filmed by a professional crew based in Los Angeles. The DVDs, which run anywhere from two to four hours, are of his projects from start to finish. You can watch trailers on YouTube, he adds.

"I'll never do anything different from building naturalistic environments or geological formations, because it's too much fun," Winget says. "The only thing I want to do is make it better."

www.authenticenvironments.com



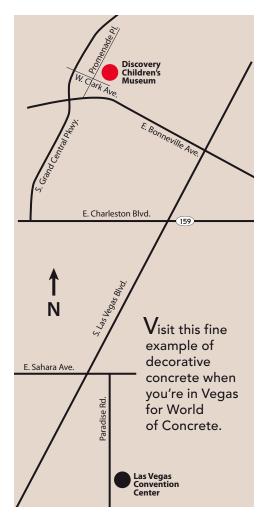


## A Volcanic Floor at the Discovery Children's Museum

by Ted Uram

HE moment you step through the doors of the Children's Discovery Museum in central Las Vegas, you know you are in for a treat. The museum promises in its mission a "vibrant and engaging experience" for children from all walks of life.

It's what's under your feet that first grabs your attention. At first glance, you may think you are standing on a pane of glass suspended miles above a Nevada desert, complete with volcanic "lava flows" that radiate from a three-story playground in the center of the floor.





"I'm pretty sure the architect intentionally designed it to look just like a topographical map," says Kenny Sorensen, co-owner of Las Vegas-based Westdeck Concrete Coating LLC, the crew responsible for this job. "At least that's what it looks like to me."

#### **Project at a Glance:**

Client: Discovery Children's Museum, Las Vegas, Nev. Decorative Concrete Contractor: Westdeck Concrete Coating LLC, Las Vegas (Kenny Sorensen and Craig Davis) General contractor: The Korte Co., Las Vegas Architect: Lucchesi, Galati Architects Inc., Las Vegas Product description: Installation of Mapei microtopping and saw-cut sections at the main lobby of museum

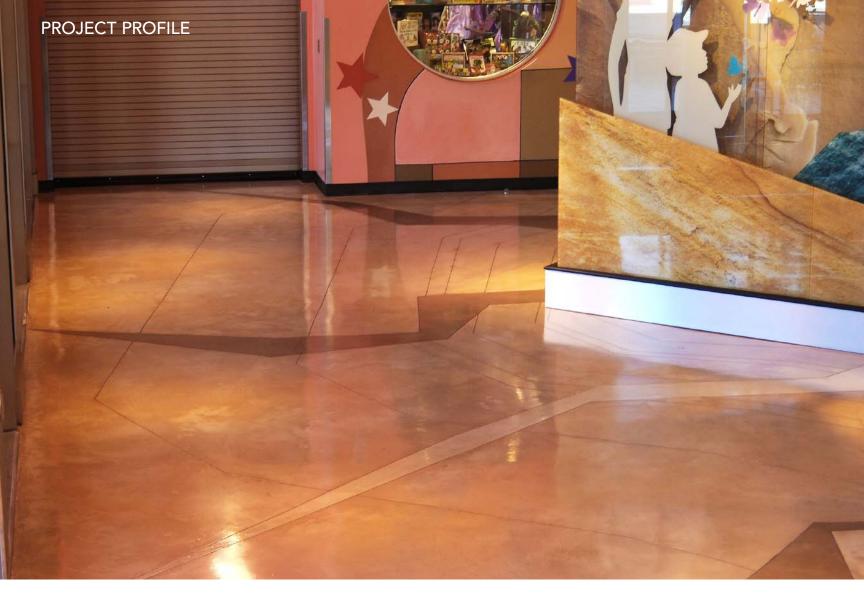
#### Timeline: Three weeks

**Materials supplier:** Border Construction Specialties, Las Vegas

Mapei products used: Primer L, Ultracolor Plus system, Keracolor U system, Planicrete UA Sealer: Calico solvent-free acrylic Although the floor's design looks simple enough, creating it was a carefully orchestrated project. Three different custom colors were used, selected from dozens of options. Final color was achieved by hand-blending integral-colored bag mixes, samples of which had to be approved prior to the application. To create jagged lines across the surface of the entire floor, numerous saw cuts were made before a trowel-down material — a Mapei integralcolored microtopping — was applied to achieve a unique texture.

The concrete floor at the Discovery Children's Museum was already in place. All that was needed was the decorative finish. Thankfully, Sorensen says, the old concrete was in very good condition. "We prepped it, primed, saw-cut it, troweled it, waxed it the whole nine yards," Sorensen says.

Don Hammond of Vegas-based Border Construction Specialties, Sorensen's product supplier, explains that the Mapei



microtopping is actually a combination of unsanded and sanded grout products with added dry colorant. Hammond says the fact that each bag mix is available in a wide variety of colors makes this particular product quite appealing to applicators. Most overlay bag mixes come in the standard white or gray, and adding color can be tedious.

Sorensen says he really likes the way the material goes down. "The



Mapei microtopping is a very smooth product we are able to install without getting a lot of chatter that you sometimes see from other microtoppings."

He says that because installers do not have to add pigment as they are troweling the floor, human error is removed from the equation. "This is really nice when doing a large project, because this helps the color stay consistent throughout the floor."

That said, the textured surface turned out to be a bit of a challenge. "We had to play with it a little bit to try to achieve different textures," Sorensen says, "but it all worked out well." The entire surface of the floor was hand-troweled, a job that took several weeks to finish.

#### Making the lightning

After diamond-grinding the old concrete surface to start the project, Westdeck primed the floor using Mapei Primer L, a solventfree acrylic primer that is intended to improve the bond between a concrete substrate and an underlayment or topping.

Once the floor was primed and dried, a chalk line was used to mark it with jagged lines. A second set of chalk lines roughly mirrored the first to create bands of varying thicknesses. The visual elements suggest volcanic ruptures, but Sorensen provides another keen comparison too.

"They almost look like lightning bolts," he says.



Sorensen's crew had only drawings provided by the project architect from which to work. It was a tedious process. As they progressed, some lines had to be moved and chalked again until just the precise look was agreed upon.

Then it was time to break out the saws. Using circular saws with concrete blades and peanut grinders fitted with ball tips, each side of the "lightning bolts" had to be cut. Sorensen estimates that nearly a mile of saw cuts was done.

The end result was 10 main (thicker) bolts that spread outward from the square play area. Each of these branch out across the floor like the roots of a tree into narrower bolts that terminate in pointy tips.

The next step was to apply the rough coat for the topographical texture. This was achieved using the Mapei Ultracolor Plus system (a sanded-grout bag mix) mixed with Mapei's Planicrete UA, a liquid latex admixture that encourages a fast-setting, polymer-modified, color-consistent, nonshrinking microtop finish.

The Westdeck crew troweled down several coats of this product, making sure to carefully mix the products to achieve precise colors. "We had to be very careful with color," Sorensen says, noting that making color samples for prior approval is part of the overall process. Once they had the color dialed in, he says, it was a fairly simple procedure.

Overall, Sorensen says the microtopping install went very well. "You're not having to add color to each mix to make everything match. It's consistent throughout."

Coats of Keracolor U, an unsanded grout, mixed with Planicrete UA were then troweled down to get the final finish. "You use a kind of wet-on-wet procedure to achieve the texture," Sorensen explains. Once the floor dried, the saw cuts were gone over one final time to clean them out.

The floor was sealed using two coats of Calico solvent-free acrylic sealer. It was then waxed and buffed several times.

Sorensen says the biggest challenge with this floor was dialing in the right colors, but he was quick to point out that this is not something he is averse to doing. "It's just part of the job," he says. The net result is a 4,700-square-foot surface that makes for a stunning entryway to the museum.

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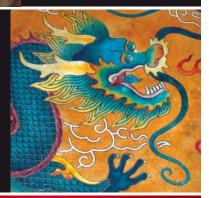




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## Seat Walls on the Pittman Wash Trail

By Gail Elber

N some decorative concrete projects, the only people looking over your shoulder are other tradespeople. But when Owen Ondrisko's crew at Stampco crafted cast-in-place benches and adjacent flatwork for a section of the Pittman Wash Trail in Henderson, they had to work around passersby during the day, then protect their work from vandals at night.

"We were doing architectural concrete down a 5-mile trail while the trail was open," Ondrisko says. "We're pouring concrete, school gets out, and 50 kids are walking by."

The city of Henderson takes walking seriously — in fact, it has 37 miles of trails and made Prevention magazine's 2007 topten list of the best U.S. cities for walking. In 2012, the city completed a pedestrian trail along Pittman Wash, a natural channel that drains stormwater from the city to prevent floods.

The benches — 37 in all, referred to by the city as "seat walls" — and their accompanying colored flatwork were part of a package of amenities for the Pittman Wash trail funded by federal stimulus money. In addition to landscaping, fencing and interpretive signage, the improvements included a series of rest areas, called "waysides," with seating



and hardscaping. Some of the waysides are located where the trail crosses a street. Others contain interpretive signage about the natural environment of the wash and the surrounding mountains.

The project was designed in a collaboration between Atkins, an international engineering and design firm



with an office in Henderson; Lage Design Inc., headquartered in Henderson; and the city of Henderson. Lindzay Green led the project for Atkins and landscape architect

Carrie Becker represented the city. Each bench is 4 feet wide and 30 feet long, with a level top that rises in steps to a height of 5 feet in some places. Ondrisko's crew built forms for the benches from half-inch plywood according to the Atkins design.

Becker says the design partners chose colored concrete for the waysides to alert

#### **Project at a Glance:**

**Client:** City of Henderson, Nev.

**Decorative concrete contractor:** Stampco Concrete, Henderson, Nev.

Landscape contractor and bench designer: Atkins, Henderson, Nev.; Lage Design, Henderson, Nev.

General contractor: Tand Inc., Henderson, Nev. Colorants used: Kahlua, Omaha Tan and Green Slate integral pigments from Davis Colors

**Project description:** Benches and flatwork for seating areas along an urban recreational trail.



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#### PROJECT PROFILE

pedestrians that they were approaching an "area of importance" — a street crossing or an informative display.

The benches were integrally colored with 4 pounds of Kahlua Davis Color per 6 1/2 pound sack. And they are colored all the way through, meaning a lot of that pigment will never see the light of day. "In the eyes of an owner, it was a lot of wasted color," Ondrisko says. "But if we stained it, it wouldn't last."

Ondrisko says that he could have gotten satisfactory results from 2 or 3 pounds of color per sack. "Once you go over 2 pounds, you're just losing the poundage. Within six months it just 'bleaches out' anyway."

The benches have troweled tops. A sandblasted pattern of lines aligns with cuts in the surrounding flatwork and areas of exposed aggregate to evoke the outlines of the dry riverbed whose course the trail follows. The crew created color effects by



varying the depth of the sandblasting. Before starting the job, Ondrisko created a mock-up for the city that showed how troweling would affect the color. "Any time



you trowel colored concrete, it mottles the color because you're burning the color with your trowel," he says.

As a finishing touch, the seat walls were fitted with antiskateboarding guards.

Stampco also poured the broom-finished flatwork around the benches, but went beyond the expected gray or another single color. "The city put some design into it," Ondrisko says. They used two integral colors from Davis: Green Slate (3 pounds per bag concrete) and Omaha Tan (1 pound).

The crew contended not only with passersby who wrote in the wet concrete but also with an unexpected storm. "I poured 150 feet of curb that got washed out in the rain," Ondrisko says.  $\checkmark$ () (702) 339-9106

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## A Mosaic of Healing and Learning Jonathan Sellers and Charlie Keever Outdoor Education

Activity Center, San Diego, Calif.

by Gail Elber

**D** NE day in March 1993, two best friends — 9-year-old Jonathan Sellers and 13-year-old Charlie Keever — went for a bike ride in the Palm City neighborhood of San Diego, Calif.

They never came home, and two days later their bodies were found in a brushy area along the Otay River. Eight years later, DNA evidence linked the murders with a man in prison for raping a woman. He was subsequently convicted of the murders and has been on death row since 2004.

The tragedy created a bond between the boys' mothers, Milena Sellers-Phillips and Maria Keever. When Sellers-Phillips participated in the search for a murdered girl in 2010, the experience renewed her desire for a public memorial to Jonathan and Charlie.

Sellers-Phillips approached Greg Cox of the San Diego County Board of Supervisors. In 2012, the mothers and the county received approval and a \$175,000 County of San Diego Neighborhood Reinvestment Program grant for a small memorial along the Bayshore Bikeway, on the southern edge

#### **Project at a Glance**

Client: San Diego County Parks and Recreation Department

**Decorative concrete contractor and general contractor:** T.B. Penick & Sons Innovative Concrete Systems, San Diego, Calif.

**Design and project management:** Stephen Cast, RLA, and Chuck Tucker, San Diego County Parks and Recreation Department; Chris Klemaske, T.B. Penick & Sons Innovative Concrete Systems

**Products used:** Lithocrete System 1 with glass aggregate, System 2 Sedimentary Walls, and System 7 LithoMosaic from Shaw & Sons Inc.; metal framework and lettering by Norfab Steel & Fabrication Inc., Flagstaff, Ariz.; glow-in-the-dark tiles from Vidrepur S.A., Castellón, Spain

**Project description:** A small area for environmental classes and public enjoyment along a bike path, conceived as a memorial to two murdered boys

**Challenges:** Creating a public memorial that would be meaningful to grieving families and be a recreational and educational asset to the community.



**Above:** Metal lettering with a Rachel Carson quotation about the healing power of nature follows the spiral design in the nautilus shell.

**Right:** Milena Sellers-Phillips (left) and Maria Keever at the dedication of the memorial to their slain sons.

of San Diego Bay in Imperial Beach. The California Department of Fish and Wildlife donated the site.

To design the memorial, Stephen Cast and Chuck Tucker of the San Diego County parks department worked with a decorative concrete master — Chris Klemaske, project developer for the Innovative Concrete Systems division of T.B. Penick & Sons Inc., of San Diego. In their hands, decorative concrete created a one-of-a-kind space for education, memory and healing.

#### System uses glass aggregate

Originally, Cast envisioned a concrete

surface that would be saw-cut and stained. Then Klemaske showed Cast examples of Lithocrete, a patented exposed-aggregate concrete system T.B. Penick installs under license from another construction company, Shaw & Sons Inc., based in Costa Mesa, Calif. hotos courtesy of T.B. Penick & Sons

From the subgrade up, the Lithocrete method specifies materials and methods for mixing, pouring and finishing a concrete job. It also includes additives and sealers formulated to control the alkalisilica reaction that can take place when using reactive aggregates such as glass. These materials and techniques allow the



Glow-in-the-dark tiles from Vidrepur outline the spiral design for several hours into the night. Telescopes let visitors observe the migratory birds that visit the estuary.

use of recycled, heat-fractured glass as a decorative aggregate — an element that appealed to Cast. The Lithocrete surface would also require less maintenance than a stained surface.

"The design process evolved from focusing on the boys' deaths to a focus on the environment," says Cast.

With input from Cast, Klemaske and the boys' mothers, the design took the form of a nautilus shell with segments outlined in steel and filled with a gradated pattern of colored glass aggregate. "The gradation of color is something Lithocrete is known for," Klemaske says.

A Fibonacci spiral was superimposed on the nautilus pattern. For the spiral, Klemaske suggested LithoMosaic, a system that is part of the Lithocrete suite. In the LithoMosaic process, the artist creates the design off-site, without time constraints, by gluing tiles to a sheet of mesh. After the tiles are embedded in the concrete, the mesh is stripped off.

Amanda Klemaske Conahan, a landscape architect and public artist, produced some options for the mosaic, and a design in glass tiles was chosen.

#### Mementos from mothers

When the mosaic was nearly finished, Conahan brought it to the T.B. Penick office and invited Milena Sellers-Phillips and Maria Keever to bring mementos of their sons to add to it.

"Amanda brought some materials we hadn't expected — tumbled beach glass called 'tears of the ocean' and glow-inthe-dark tiles," says Klemaske. Vidrepur (Castellón, Spain) makes the tiles, which glow blue for eight hours after exposure to light.

Together, Conahan and the mothers added meaningful elements to the mosaic spiral, including framed photos of the boys.

For seating, Cast chose Sedimentary Walls, another Lithocrete system, to surround the nautilus shell. Sedimentary Walls are constructed in layers with distinctive aggregate in each layer, evoking the appearance of sedimentary rock. Cast created a pattern of glass aggregate in the layers.

Volunteers hauled donated boulders to the site to provide additional seating. California Conservation Corps Crew 26 installed the boulders and paved a path with decomposed granite.



Milena Sellers-Phillips (left) and Maria Keever (rear) add personal touches to the mosaic Fibonacci spiral as Amanda Klemaske Conahan looks on. In the LithoMosaic system, the mosaic is created off-site on mesh, then embedded in the concrete. The mothers placed the mementos on the mesh right side up, and Conahan turned them upside down before gluing.



Photos of Jonathan and Charlie are embedded in the finished mosaic.

#### **PROJECT PROFILE**



Because the memorial was on a sandy site near the bay, site preparation required some extra steps. For a stable foundation, the site had to be excavated 5 feet deep to allow for sufficient compaction of the soil. Epoxy-coated rebar was used, and the metal framework outlining the nautilus shell was made of surgical stainless steel.

The steel framework, fabricated by Jay Neis of Norfab Steel & Fabrication Inc. (Flagstaff, Ariz.), was placed on chairs on the rebar. Concrete was poured into each segment, and glass aggregate was distributed on the surface to create a color gradation in each segment.

The finished site has telescopes made by The Glass Eye, in Signal Hill, Calif., for viewing wildlife. Plaques identify nearby vegetation. The glow-in-the-dark tiles define the Fibonacci curve at night, creating a pathway that the mothers have described as "showing the way."

The Jonathan Sellers and Charlie Keever Outdoor Education Activity Center serves as an outdoor classroom for nearby Bayside Elementary School and other schools. The U.S. Fish and Wildlife Service Educational Outreach Program also uses the center for outdoor classes. It provides a vantage point from which visitors can observe migratory birds that visit the nearby estuary.

Cast credits Klemaske with introducing many of the design elements and praises her emotional attachment to the project. "During construction, when one of the mothers couldn't arrange for transportation, Chris stepped up and dispatched a limousine to ensure that both mothers could participate in the process," he says.

"It's a small project, but it's significant

in so many ways," Klemaske says. "It's just turned out really beautiful. It was everything they wanted it to be. I've worked on multimillion-dollar projects and tiny projects, but this was just one of those — it meant so much to be a part of it."

In metal letters embedded along the line of the spiral are these words the mothers chose from an essay by environmentalist Rachel Carson: "There is something infinitely healing in the repeated refrains of nature — the assurance that dawn comes after night, and spring after the winter." **\* §** www.tbpenick.com



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## Concrete Crafters Blend Applications at Popular Microbrewery Sun King Brewing Co., Indianapolis, Ind.

#### by K. Schipper

**T**HERE'S a little bit of art and a little bit of science involved in the making of beer. And when the popular Sun King Brewing Co. in Indianapolis, Ind., needed an upgrade to its floors, the local flooring contractor contacted to handle the job applied the same mixed approach.

For areas subject to chemicals, spilled beer and hot-water washes, the science came from Dur-A-Flex and its Poly-Crete SLB urethane-based system. For the art, Indianapolis-based contractor Preferred Global Inc. utilized a stencil and stains to add the company's logo to the floor of the tasting room.

The end result: floors that both client and contractor are extremely proud of.

#### A tale of two floors

In a growing industry, Sun King Brewery still stands out. A popular microbrewery that crafts both a premium product and numerous seasonal offerings, Sun King is the first brewery to ever win four gold medals at the prestigious Great American Beer Festival, held annually in Denver.

It's pretty heady stuff for a company that brewed its first batch of beer in July 2009 utilizing used equipment and located in a 1950s warehouse in downtown Indianapolis.



Photos courtesy of Preferred Global Inc

Although the warehouse came with concrete floors, in an attempt to limit the amount of damage deposit Sun King had to put down on the rented space, co-owner and business manager Omar Robinson came up with the idea of putting down 6-mil polyethylene sheeting and pouring a second floor over it.



#### 50-by-30 section for our brew house. And, each time we've grown, we've done that." The solution might have saved on

"It had the right slant and the drains were

built into it," he says. "Initially we poured a

possible damages, but it had one major problem: over time, the mix of hot water, beer and chemicals hitting the concrete

#### **Project at a Glance**

Client: Sun King Brewing Co., Indianapolis, Ind. Decorative concrete contractor: Preferred Global Inc., Indianapolis, Ind.

**Project description:** Protective coating for production area floors, polish and stenciled stain on tasting room floor

**Products used:** Dur-A-Flex Poly-Crete SLB with CF urethane topcoat in product areas, Lythic Densifier and AmeriPolish dye for the tasting room, custom stencil from local supplier Logan Street Signs & Banners

Machines used: Blastrac equipment in the production areas, HTC 800 series equipment for the polish and stencil work in the tasting room





caused it to begin breaking down, exposing the aggregate and even creating holes.

Enter Greg Wafford, a salesman for Preferred Global, who'd been calling on Sun King regularly and who's serviced such food and beverage industry companies as Frito-Lay and the Chipotle and On the Border Mexican restaurant chains.

"It took a little time, but after we talked Omar realized he needed something," says Wafford. "I educated him on the systems we provide and told him the best system for his environment is a urethane mortar system that has texture, and a urethane topcoat."

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#### **PROJECT PROFILE**



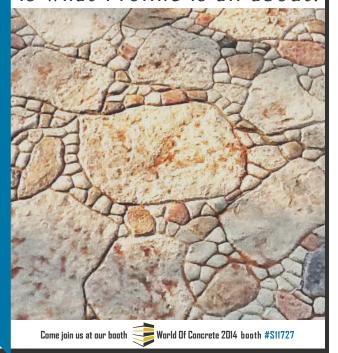


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#### The advantages of urethane

Installing the urethane system is a multistep process that begins with blasting the floor to give the concrete a profile for the urethane slurry to key into. Along with blasting the floor, Wafford says particular attention is paid to areas around drains and where directional work will stop and start.

"That way it's locked into the area we're working in and there's no lip," he explains.

The second day, the slurry is applied with a half-inch V-notch squeegee, allowed to cure for 20 minutes, then loop-rolled. Then, the proper texture is broadcast until it reaches the point of rejection.

The third day, the Preferred Global crew returned to sweep and vacuum the floor, then apply the urethane topcoat.

While the Dur-A-Flex system offers several advantages, including the ability to further increase the floor's slope to drains through the use of a urethane grout on the blasted floor surface, perhaps its greatest one is that the three-day application allowed Preferred Global to work around Sun King's own busy schedule.

Wafford explains that when the system was being installed, Sun King would simply

shut down its production midafternoon on Fridays and return to new floors the following Monday.

"We just put a lot of people on it," he says. "We can pretty much work around their schedule. There's a little coordinating upfront, but once we begin to work, we do the job quickly and get it done."

The schedule has certainly met Sun King's expectations. Since the initial job in the brew house, Preferred Global has been called in to do the cooler floors and even the restroom floors as the brewery continues to grow and expand.

#### The hall of the Sun King

While Wafford had his eye on Sun King's needs for a safe, clean environment for its production, he also expressed concern to Robinson about the brewery's tasting room floor.

"Every time he'd come in, he'd say, "This whole area looks like hell," Robinson relates. "There were a lot of uneven parts and there was the new versus old issue."

Wafford describes the area as just old, dirty and bare concrete that was hard to clean. Because Preferred Global does a lot of polishing and staining in the retail industry, he proposed polishing the floor and applying a stained image of the company's logo, an Aztec sun god.

The logo, which also incorporates the four elements of beer — water, yeast, hops and grain — in its quadrants, was sent off to an artist as a TIF file, while the company began the business of polishing the floors, preceded by tests to assess the concrete's hardness and whether it had been treated previously with a sealer or other coating.

The Sun King floor was ground up to 150 grit. Then resin-based polishing pads were used to polish — 100 grit, 200 grit, 400 grit, 800 grit and 1,500 grit —with Lythic Densifier applied after the 200-grit step.

Once the polishing was completed, Wafford says the 10-by-10 four-color logo was applied at the rate of one color per day. Then the whole area was treated with a densifier and burnished.

"That really works to protect what we achieved with the polishing," he says. "It works together with the concrete to where it's smooth, but it tightens the concrete and makes it harder."

Robinson says the response to the floor logo has been outstanding, and while the tasting room floor isn't receiving the same stress from heat and chemicals as the production area, it's all holding up well.

"On a Friday we can have 700-900 people come through here between noon and 7 p.m., and while we seldom have forklift traffic on it, the foot traffic is very heavy," Robinson says. "The way they sealed the seams and polished it, it's still perfect."

Ultimately, both men are pleased with their relationship. Next up for the brewery is a passageway between the production area and the tasting room, which will be getting the Dur-A-Flex treatment. There's even more planned in the future. Sun King will be opening a distillery next year, and Preferred Global will be on hand to do the floors — before any equipment goes in this time.

"It's been exciting working with Omar and his partners, seeing their growth and helping us grow as a company, too," says Wafford. "I also know we're providing them with the latest and greatest in flooring technology."

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# Helping Decorative Concrete Survive the Winter

Anthony Fortini clears snow off a European fan pattern in Pennsylvania.

Photos courtesy of Bart Sacco

#### by Bart Sacco

INTER and freeze-thaw have a way of exposing defects in concrete we normally would not see in warmer regions. These defects can be attributed to factors that include abuse of the water-tocement ratio on the first day of the pour, improper finishing errors, a problem with the concrete materials, mix design, low or no air entrainment at time of pour, or even soft or reactive aggregates. They can be either installer-related or material-related.

Sometimes it is nearly impossible to figure out all of the factors that led to the surface problems without interviewing the installers who were present on the first day of the pour. But in any case, we must understand the materials we're working with.

Think of concrete as a giant solid sponge continually taking moisture in and out throughout its life cycle. Understanding the importance of proper mix design, finishing and curing techniques will minimize winter defects and provide your customer a lasting product for years to come.

#### What causes winter problems

It is widely believed that the de-icing chemicals we use on concrete during inclement weather are the major factor in winter problems. This is a misunderstanding. In reality, the chemicals themselves are not causing the problem. Rather, the issue is these chemicals' effect on water molecule size as the temperatures drop into the freezing zone.

When water freezes, its volume naturally increases by up to 9 percent. When freezing is delayed with the application of a de-icer, the water volume will increase additionally one to four times beyond the point of where it expands when it freezes at 32 degrees.

Basically, the lower the temperature our water actually freezes at, the more it expands. This growth creates a situation



A driveway in Mountain Top, Pa., with salt damage. This property was right off an interstate and the owners tracked salt from the highway onto the drive. Perhaps the concrete was a lower-grade mix or suffered an improper amount of air entrainment at the time of pour. You can see it was not durable.

where the concrete cannot handle the excessive hydraulic forces being created internally. Freeze-thaw defects arise as a result, normally in the spring in the form of surface defects such as spalling or pop-outs.

Let's go through the gamut of de-icing chemicals, in terms of aggressiveness and delayed freezing action. We will start with urea. Urea is a natural chemical like salt. However, it is noncorrosive and only effective to about 23 degrees.

Potassium chloride formulations normally will work better and provide benefits to about 20 degrees.

Then we move to sodium chloride formulations like standard rock salt. You will see effectiveness down to about 12 to 15 degrees.

Now we move to calcium chloride and magnesium chloride chemicals, which are marketed as the modern pet-safe deicers. We all know them as the white, blue or green crystals. These are the upper end of de-icing chemicals and provide benefits in the range of zero to minus 25 degrees.

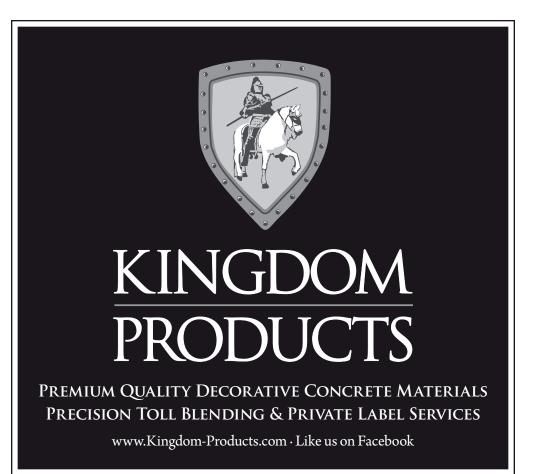
All these chemicals mentioned above work very similarly. The main difference between them is at what point the water (or now, water/brine solution) will actually freeze with their usage.

#### **Prevention tips**

Producing quality concrete with excellent freeze-thaw resistance and preventing surface problems for your customer actually begins on the day you plan to pour the concrete. This means taking into consideration the weather, concrete mix design and environmental conditions of the site, not to mention having a well-trained crew educated in proper finishing techniques.

Here are a few tips to help you:

Ensure you have selected a concrete mix design that is capable of withstanding the environment where it's placed. In the area where we live, northeastern Pennsylvania, we have some of the harshest freeze-thaw effects in the nation. It is recommended for outdoor use that we pour a 4,000-psi mix with air entrainment of approximately 5 percent, plus or minus 1 percent, and most importantly, we must keep our water-tocement ratio in the area of 0.40 or less. The concrete spec for your area may be different due to your climate and season.





Left: A Nuangola, Pa., driveway with salt damage. Right: The driveway restored with Kingdom Products' Top Cap overlay custom-colored to match the original project.

- Utilizing concrete from a reputable ready-mix supplier using sound aggregate is a must. I have seen plenty of defects after winter due to either soft or reactive aggregate being utilized in the mix. This can lead to scaling or pop-outs.
- Avoid long transit times for the ready-mix and excessive mixing at high speed. Both could deplete air entrainment in your concrete, leading to durability issues.
- Proper placement and finishing techniques must be utilized throughout the installation process to ensure quality concrete. If you are pouring in winter months you should never pour on frozen ground. Under- or overworking the concrete and premature finishing can cause durability issues with the surface. Extra water added at a job site can also lead to surface problems and poor finish quality, especially if the mix design you're using has not achieved the desired water-to-cement ratio.





Pop-out damage due to soft aggregate in the concrete. A stone fractures in half due to freezing moisture absorbing into it. Half the stone is in a chip that gets blown off the surface. The other half of the stone stays embedded in the concrete.

Curing must be taken into consideration for long-term success. If you're pouring in winter months your concrete must gain at least 500-psi strength before it is exposed to freezing temperatures. If the surface is exposed to frost or freezing temperatures prematurely on the original day of the pour, the long-term durability of the surface will very likely suffer. It is imperative to select a day during which you have acceptable weather conditions and above-freezing temperatures throughout the pouring and the initial set of the curing process.

Hopefully this information will give you some insight as to de-icers and the main reason you see damage as a result of their use. Understanding concrete and how to produce a quality installation will provide your customer with trouble-free years of use.

One more thing: No matter what time of year the concrete has been poured, it should never be exposed to de-icing chemicals during the first winter. Your concrete will be much more durable in years to come. Even if the concrete was poured in April and allowed to cure all summer, avoid the de-icer chemicals the first year. When the concrete has gone through a full season or two of freeze-thaw cycling it will become a much more durable product in the long run.

Please educate your customer to this fact. It will spare you many callbacks and displeased customers. I have seen many homeowners destroy first-year concrete due to not being educated about keeping deicers off the surface during the first winter season.

Bart Sacco is the president of Kingdom Products and also owns and operates Concrete Texturing Tool & Supply and the Concrete Kingdom Training Center, based in Throop, Pa. He can be reached at bart@kingdom-products.com.

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## Why is My Deck Overlay Failing, but Only Where It's Exposed to the Elements?

by Chris Sullivan

uestion: I have an exterior raised wooden deck that has a cementbased overlay applied to the top. The area that is under roof is fine, but the area that is outside is failing. The edges are crumbling, the steps are falling apart and there is a section we had to cover with plywood because a hole developed. We have had a few contractors quote the job and the prices are very high. Most want to replace the entire deck. Why is the outside part failing? Do we need to replace it all, or can we just replace the portion not under roof? One installer quoted a 10-part process with many layers of waterproofing. Our insurance company is asking for proof that this many steps are necessary. Any help or advice would be appreciated.

HAVE often said that the decorative concrete industry uses what other trades have known for decades and improves it. In this case we can look to the tile industry and learn from what they have known for years. Cement-based materials do not do well when applied directly to wooden substrates, especially when exposed to the elements.

Transition layers such as mortar beds and cement board are mandatory when transitioning from plywood flooring or decking to cement-based systems such as overlays. These cement-based transition layers provide durability, rigidity and the proper surface for tile or concrete overlays. In this case there was no transition layer installed. This is why the cement-based topping has cracked in many places, which was not even mentioned in the email but can be seen in the pictures.

That aside, the main reason for the massive failure of the exposed portion of the deck is the lack of any waterproofing layers between the overlay and the wooden deck. Water migrated through cracks, seams and edges into the wooden subfloor and joists



At a home in northern Colorado, rotting wood due to moisture intrusion can clearly be seen through this crack.

and, over a few years, rotted the wood.

When I visited the site I also discovered that the deck was built with interior-grade OSB (oriented strand board) joists, along with interior-grade plywood. Because interior-grade lumber was used, the bottom of the deck was closed in and finished. While the intent to protect the joist and plywood deck from the elements was good, this decision actually worked against them. Because the joists and plywood decking were closed in, there was no air movement. Once moisture migrated into the wood, the lack of air allowed it to collect and rot the wood. The low-humidity environment of northern Colorado would actually have dried the wood out if it had been exposed, improving the longevity of the deck in the long run.

Overall, not only does the installation not meet local building codes, but it is outright dangerous and was doomed to fail considering the interior-grade materials that were used, lack of waterproofing and substandard installation. It should be noted that the concrete overlay is in excellent condition under the covered portion of the deck, and even on the outside portion of the deck the overlay itself is performing. It's the rotting and disintegrating subbase that is causing the failure. This says a lot for the durability and performance of decorative concrete overlays even in the most adverse conditions.

In regard to the question of whether the exposed portion can be replaced or the entire deck needs to be fixed, I would recommend that the entire deck be replaced.

While it is not impossible to replace just the failing outside section, matching the color and texture will be difficult. In my experience, no matter how accurate the color match, the new section will look different and the repair will be very noticeable — although I should note that I have seen repairs similar to this where the new section was installed in a different color or texture, eliminating the guesswork of color-matching.

The bigger factor in recommending



Water pooling on the surface, caused by a rotted and collapsed wood subfloor.

that the entire deck be replaced is that even the section under roof, which currently looks OK, will deteriorate sooner rather than later because of the substandard materials and installation. Because the underneath portion of the deck is finished and closed in, there is no way of knowing the true condition of the wooden joists and subfloor. I feel it is better to replace it all at once rather than having to go through a second massive replacement a few years down the road.

The insurance company need not look much further then the current condition of the deck, paying close attention to the 4-foot-wide hole in the middle that is currently covered with plywood, as proof that waterproofing is necessary. If that is not enough, the soaking wet and rotting wooden joists and plywood are another smoking gun reinforcing why waterproofing is critical in this type of installation.

After researching many decorative manufacturers that offer deck coatings, I see that the reputable ones all recommend seven- to 12-step processes for this type of application. The steps include but are not limited to:

- 1. Priming the wooden subfloor
- 2. Metal lath and repair mortar or cement board
- 3. Primer
- 4. Waterproof coating (either liquid-applied or a rigid membrane)
- 5. Optional second coat of waterproof coating
- 6. Primer
- 7. Scratch coat of decorative overlay
- 8. Body coat of decorative overlay
- 9. Optional finish coat of decorative overlay
- 10. Sealer system

While the systems by manufacturer will vary, I would be skeptical of any system that does not include at least one layer of the four major sections (subfloor transition, waterproofing, decorative overlay, sealer system) with the proper primers between each layer. This may seem like overkill to some, but without the proper layers and transitions, water and rot will destroy or cause delamination of these types of exterior deck systems.

It is not a surprise why substandard decks like this are installed. The expense of doing it right can be higher than most other decking materials. In many cases the materials alone for the system as outlined above can run \$4 to \$6 per square foot. That being said,



Water intrusion causing failure around the steps.

an exterior decorative concrete deck system installed properly will outlast wood by decades without much maintenance, providing aesthetic value and looks that you just cannot get with any other building material.

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





## Common Misconceptions about Concrete Countertops and How to Combat Them

*by Jeff Girard, with Lane Mangum* 'VE written a lot of technical articles educating you, the contractor, about various topics related to concrete countertops. But what good is your education if your potential clients are not also educated?

Concrete countertops have been around for decades now, and more and more magazines and TV shows are featuring them. So you wold think misconceptions such as "concrete countertops are cheap" or "concrete countertops are high-maintenance" would be a thing of the past. Unfortunately, that is not the case. Just last August, an article on the Yahoo! Homes website called "8 Kitchen Counter Options That Will Make You Forget Granite" offered this gem:

"New colorizing and stain techniques have made concrete counters more popular than ever. Skilled craftsmen can create beautiful concrete countertops in any color, shape and size. Embedded stones, tile or even silicone chips can be added to the mix to create a piece of art. The result is a beautiful counter that's durable as well as scratch- and heat-resistant.

"The counters, which can be extremely heavy, are susceptible to damage from acidic liquids and must be sealed and regularly maintained to resist stains."

In this article I will endeavor to give you ammunition to clear up misconceptions such as these — and get prospects as



The variety of sink shapes you can make with concrete blows away the granite and solid-surface competition.

excited and inspired about concrete countertops as you are.

#### Misconception No. 1: Concrete countertops are cheap

They're just concrete, so they must be cheap, right?

When people hear the word "concrete," they often think of a sidewalk, or perhaps a driveway or parking garage. They may



This floral edge is easy (and profitable) to do with concrete, but nearly impossible to get with granite.

be unaware that the beautiful decorative surfaces they've seen in shops, restaurants and public spaces are actually decorative concrete, or they may have seen a highquality concrete countertop and thought it was some kind of stone.

The best way to combat this misconception is with an analogy: Wood is cheap and plentiful. Many common items are made of wood, such as 2-by-4s or pallets. Those are cheap. However, violins are also made of wood. Should violins be cheap? No, of course not. Highly specialized wood is used by a skilled craftsperson to create something that is both functional and beautiful. Concrete countertops are the same.

Concrete countertops should be priced higher than granite. They are the more custom, personalized, unique surface, and that makes them the highest-end surface. Here's another analogy to help you:

You can buy a suit for \$200 off the rack at a store. You would probably have it hemmed to fit you. This is standard granite. Or, you could travel to London and have a tailor

on Saville Row hand-make a suit to fit you. Concrete is even more custom than that. Concrete is like traveling to India to select the silk and wool threads to be used, specifying what thickness and color to make them and how to weave them together, and then flying to London to have the suit handmade. This would cost many, many times more than an off-the-rack suit. But concrete countertops cost just a little bit more than granite. That's a fantastic deal!

#### Misconception No. 2: All concrete countertops are the same

Despite the fact that concrete countertops are high-end and should be priced accordingly, you may have a contractor in your area selling elevated sidewalks at low prices. Your prospects may be tempted by these low prices, figuring, "Concrete is concrete."

If a prospect is concerned only with price, tell them concrete is not right for them and move on. If the prospect is genuinely interested in having a unique, custom surface, they will be willing to learn more and appreciate the education you provide them. They will build trust in you and prefer to do business with you rather than go with the cheapest price.

You can discuss with these prospects that not all concrete is created equal. Explain to them that concrete countertops use highly specialized mix designs (especially GFRC), and are not the same as a sidewalk mix out of a truck. Explain to them that the finishing techniques with coloring, diamond polishing and highly specialized sealers are completely foreign to a sidewalk contractor. Show them photos, such as those from The Concrete Countertop Institute website's "Hall of Shame," of what happens when an inexperienced contractor tries to make a concrete countertop. Show them samples

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and photos of your work so that they can see the level of craftsmanship.

This doesn't have to sound like a desperate sales pitch or bashing anyone else. Present it as: "This is one of the most common misconceptions in the industry, and it's unfortunate because it results in bad examples out there that give concrete a bad name. I'm very passionate about my craft, so I'm glad to have this opportunity to explain to you how high-quality concrete countertops are different."

#### Misconception No. 3: Concrete countertops are just like granite or solid-surface

Your prospects may have seen concrete mentioned as an alternative to other countertop surfaces, for example in Consumer Reports magazine. However, they may have no idea of how much you can do with concrete that is very difficult or impossible with other surfaces. If they are thinking of concrete merely as an alternative to granite, you will be stuck competing with the plummeting price of granite.

Concrete can be so much more than just flat countertop slabs picked from a catalog or slab yard. It can have amazing decorative edges, like a rope or floral pattern. It can be color-matched to tile or paint. It can have integral sinks. It can have features such as integrated drainboards or cutting-board inserts. And way beyond those easy ways to customize concrete, it can be threedimensional.

The possibilities are endless. As a concrete countertop professional, you should have GFRC and mold-making in your repertoire, so that you can create those impressive 3-D pieces to illustrate these possibilities. Show your prospects those possibilities, and they will get just as excited and passionate about concrete as you are.

## Misconception No. 4: Concrete countertops stain/scratch/burn

There is a great deal of conflicting information in consumer media about the performance of concrete countertops. Some articles or shows say that it stains, some say it doesn't. Some say it scratches, some say it doesn't. What all of these media fail to point out is that concrete's performance depends almost entirely on the sealer.

A few years ago, Consumer Reports included concrete for the first time in its annual countertop buying guide. Unfortunately they only tested one fabricator's concrete and did not mention what type of sealer he used. They ended up reporting that concrete stains easily. I sent a letter to the editor, and the following year they tested one sample with a coating and one sample with a penetrating sealer. Here is what the magazine's online Buying Guide currently says about concrete countertops:

"Concrete countertops can provide a unique look. This exclusive material is typically custom-formed by local fabricators, so quality may vary.

"Pros: Concrete can be tinted and textured and can include stone chips.

"Cons: It chips and scratches easily and can develop hairline cracks. Topical sealers can protect against stains but not heat; penetrating sealers can handle heat, but not stains."

This is better, but still not quite right. Scratching also depends on the sealer. Plus you can do a lot more with it than embed stone chips.

What can you do about all these wildly varying reports of concrete's performance? Know your sealer inside and out. Explain to prospects that performance depends on the sealer, and let them know exactly what the performance of yours is. Scratch a sample with your keys, in front of your prospects. Put ketchup on it in front of them, let it sit while you're talking, then wipe it off and show them what happens. Tell them what will happen if they put a hot pot from the oven on it. Show them what a scratch or stain repair looks like and how to do it with the touch-up kit you're going to provide them. Show them the maintenance procedure, whether that's waxing periodically or just cleaning with a nonabrasive cleaner. Put all this in an Owner's Guide that you include in the contract.

This level of disclosure may discourage some people from buying your concrete, but you do not want those clients because you are destined for callbacks from them.

This level of understanding also means that you have to test your sealer ahead of time. You have to know how it behaves and how to best repair it. Learn all of this before you ever present a sealer to a client. This is probably the single biggest thing that contractors can do to check the misinformation about concrete. Callbacks and dissatisfaction with concrete almost always stem from sealer problems borne of misunderstanding. Prevent that misunderstanding during the sales cycle, and horror stories about concrete countertops will stop.

Jeffrey Girard is founder and president of The Concrete Countertop Institute and a pioneer of engineered concrete countertops. He can be reached at info@concretecountertopinstitute.com.

Lane Mangum is vice president, business services, of The Concrete Countertop Institute. As marketing and sales manager for Jeff Girard's concrete countertop manufacturing business, she transitioned the company from hobby-level to dominant regional fabricator of concrete countertops in just a few years. Lane now teaches other concrete countertop companies how to do the same. Contact her at lanem@ concretecountertopinstitute.com.

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## Hands-on Grinding and Polishing Tips: Rotation, Presoaking and Play Sand

#### by Bryon "Bru" Bruington

IP one: Play sand can be a contractor's best friend when it comes to concrete grinding and polishing.

Play sand is a great thing to keep handy as an abrasion aid when grinding concrete. It keeps the diamonds dressed and cooled while acting as a secondary abrasive to assist in the actual grinding process.

For example, say a contractor is making the first cut to prep a concrete surface. If, after the first 200 feet, he notices that his tools are no longer cutting and producing debris, he can simply throw down some play sand. Likely, the problem is that the tools have heated up and the matrix has started to swell, trapping diamonds and refusing to release them so that the next diamonds can cut. The play sand will provide the necessary debris to help the tools abrade away some of the matrix and expose the new diamonds.

The end result: Constantly dressed tools for maximum performance.

In addition, play sand keeps the sealer, adhesive, mastic, etc. from collecting back together to form a mass, which can smear back to the substrate during the progress.

## Tip two: Rotating concrete grinding machines can extend the life of diamond tooling.

Rotating a machine can help a contractor in many ways. For those new to the business, this can usually be easily accomplished by finding and activating the "rotation" button on the grinder. Doing this will redress a diamond that has a direct wear pattern and will help open a glazed tool. Rotating your machine will also help cool stones, producing a different leading edge.

If you are grinding soft, porous concrete, rotating your machine will help as well. For example, some soft concrete will wear the leading edge of the tool segment, changing the surface of the tool. With the surface area changed, the tool can leave behind erratic scratches and a very inconsistent appearance on the surface. This could reflect through a thin-mil covering and get a polish job off to a bad start.







#### Tip three: Presoaking carpet adhesive is a good idea when it comes to removal.

Yellow and white adhesive is almost always water-based. By presoaking it, you will rehydrate the adhesive to create swelling in the material.

As the material swells, it can "debond" itself from the concrete, making it much easier to remove. You should note that this is not a full wet grind or scrape, and you should only use enough water to soak in and rehydrate. If too much water is used, the material will spread on the surface and dry, resulting in the same type of removal issue as before. Use just enough water to gather the material in small chunks after scraping.

Presoaking will also help keep the temperature of the tools down, reducing smearing.

Some carpet adhesives can have a green or blue color. These adhesives are most likely epoxy- or urethane-based. Water will not help with that type of removal, but play sand will.

## Tip four: Presoaking a very hard-trowel slab can make the grind a little easier.

Contractors can presoak a hard-trowel slab to aid grinding. This will help reduce the surface tension of the slab and flush small aggregate and sand to the surface.

The aggregate and sand will aid the opening steps of your grind. They act as a secondary abrasive and will assist in the abrasion of the diamond matrix to produce fresh diamonds in the tool.

Presoaking will also bring the surface temperature of the concrete down, helping with operational temperatures of the tooling.

Sometimes what appears to be a hardtroweled slab is really a tight slab with thin layers of cure-and-seal. This type of sealer can glaze a tool, causing it to heat up. The sealer can be removed with play sand and water.

#### Tip five: It is very important to keep the water channels open on wet resin pads and wet-transfer tooling when wet grinding.

When wet-cutting with a transition tool or resin, it is critical to make sure that the water or air channels stay open.

If they get clogged, they could trap spent tools in the built-up slurry paste and produce an irregular, unwanted scratch. Open water channels give the slurry a place to escape, leaving a clear path for debris that follows.

Keeping the channels open ensures the tool maintains a proper operating temperature. Even though the tool is operating in a wet condition, the building of debris in the water channel can affect the temperature, resulting in premature wear or improper performance.

If a large project is being performed, make sure the second shift understands the amount of water needed to perform at peak levels. Contractors should make sure that the first-shift crew relays the proper information to the second shift, so that the end result of the job is consistent throughout.

And by the way, never run a dry-only pad wet!

Bryon "Bru" Bruington is technical sales director at KutRite, a producer of products focusing on the concrete grinding, polishing and scarifying industry. Bru welcomes all questions. Email him at b\_bruington@kutritemfg.com.



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## The CSDA's New Concrete **Texture Standard** What does ST115 mean to the polishing industry?

#### by Andy Bowman

T115 is a new standard for the polishing industry that was adopted in fall 2013 by the Concrete Sawing and Drilling Association (CSDA). The standard explains in detail how to measure the texture of a concrete surface by using a texture meter.

The standard assigns a numerical texture-grading code to the finish so the design community and end users alike can begin to have a more structured conversation about the quality and sustainability of a polished concrete surface. It can also be used to determine if steps in the polishing process were skipped or avoided.

The standard covers encountering surfaces that contain a lot of flaws, rollout (when sand is pulled from the matrix of concrete with an abrasive tool during the grinding or polishing process) and voids. It looks at how to properly honor these character flaws in the surface and get a reliable reading. ST115 also equips the processor of the polished floor system with a valuable device that enables them to monitor the refinement process of a specific tool in a multiple-tooling system and measure the surface of the concrete after the tool's work is completed. This allows the

processor to monitor the quality of abrasives he is using from his current supplier and gives him the ability to compare similar abrasives from competitive manufacturers.

ST115 is a very detailed map of surface measurement that will catch any minor adjustment or deviations from the surface. The quantitative surface refinement number is always accurate and does not vary depending on the type of polish guard or sealer that was used.

It has always been important for polished concrete to have a quantifiable standard for the level of finish being produced. The first best-practices documents written in our industry broke out the various levels of grinding. Not only did the polishing industry follow the refinement process, it also understood that sequencing steps would need to follow the selected starting grit in order to get a clean, scratch-free finish. The polished floors that were produced with this basic concept provided a consistent finish and a relatively predictable outcome.

When the industry evolved into a completely dry polishing system as an alternative way to polish concrete, it identified a similar progressive sequence of steps that also focused on a high degree of refinement and produced a comparative and predictable finish.

Many of the discussions early on about the quality of finishes were settled by using a gloss meter. This quantitative measurement gave the end user a quantifiable standard to write into a polishing specification, and the facility was virtually guaranteed to get two things at once. The first was a highly processed and refined floor, and the second was a gloss level that was easy to achieve by selecting resin-bonded abrasive tools. You could increase the gloss level if higher progressive grits were run over the last polishing grit selected.

The problem is that over the past six to seven years, end users have been experiencing sustainability issues that they had never encountered before.

In today's polished concrete world, we see a wide range of systems and equipment, and just as many types of specially formulated chemicals and abrasives for the polishing industry, with only one quantitative standard of evaluation, the gloss meter. No fault to the gloss meter, but some of the topical concrete polishing sealers have the ability to cover heavy metal-bond



The CSDA Texture Specification Symbol





Material Removal Not Allowed

#### **CSDA Exposure Specification Table**

Level	Type of Exposure	Code #	Description
1	Paste Region	1	Surface finishing to reside in the upper region of the concrete. Removal of latency and machine/ finishing trowel marks only.
2	Sand Finish	2	Aggregate fines and sands located in the upper region of the concrete. This finish has a good ratio of paste/sand, typically a 50/50 mix.
3	Moderate Aggregate	3	Exposure of all the fine aggregates, including medium pea-size aggregate. Limit depth of cut to not expose aggregate larger than a dime.
4	Coarse Aggregate	4	Majority of exposed aggregates located at the surface exceed the size of a dime.

<b>CSDA Surface</b>	Texture	<b>Finishes</b>	Chart
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ST115 Surface	Unit of Measure = Ra		
Texture Grade	µin	μm	Surface Grade
A-1	2	0.0508	Finish by Design Spec
A-2	4	0.1016	Finish by Design Spec
A-3	8	0.2032	High Polish
B-1	16	0.4064	Medium Polish
B-2	32	0.8128	Low Polish
B-3	64	1.6256	Honed Smooth
C-1	125	3.175	Honed
C-2	250	6.35	Ground
C-3	500	12.7	Heavy Texture

#### **CSDA Comparative Analysis Reference Chart**

ST115 Surface	Compara	Produced		
Texture Grade	Gloss Reading	DOI (Distinctness of Image)	Finish	
A-1	Finish by Design Spec		Ultimate Finish	
A-2	Finish by Design Spec		Super Finish	
A-3	75-80 80 & up		3,000 Grit	
B-1	65-75	70 & up	1,500 Grit	
B-2	40-65	40-65 50 & up		
B-3	30-40	20 & up	400 Grit	
C-1	25 and less	N/A	200 Grit	
C-2	15 and less	N/A	100 Grit	
C-3	5 and less	N/A	50 Grit	

scratches, change the texture from rough to smooth, and even increase the gloss number on projects that were tested with failing readings. These "tricks of the trade" have caused end users to spend much more than expected on maintenance systems to keep their floors looking as good as the day they were finished. These floors are not holding their own. Why? Surface refinement is ignored in processes that endorse skipping progressive steps and not properly chasing the scratch out of the surface.

Function and sustainability are the positive attributes of polished concrete, so our industry is working hard to provide clear language about evaluating the quality of a polished concrete surface beyond the ability to record scattered light with a gloss meter.

Over the past two years, I have had the honor of being the chair of a group of 16 experts in the fields of surface metrology, concrete finishing, concrete repair and concrete mix designs, representing five major industry associations (the American Concrete Institute, ASTM International, American Society of Mechanical Engineers, International Concrete Repair Institute and CSDA) and representing five continents. We assembled the concrete industry's first standard for quantifying a concrete surface by accurately reading its texture and assigning the proper designation code or STG (Surface Texture Grade). This is



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the first standard of its kind for the concrete industry — but not a new standard to other industries. The metal and plastic finishing industries adopted similar standards more than 50 years ago because they both experienced the same challenges with interpretation and processing techniques.

The one thing that will always remain constant and true about surface finishing is that any surface with a high degree of refinement can produce a byproduct called gloss. You can never have a highly refined floor without gloss, ever. ST115 is not biased, does not take sides, does not allow cheating, and does not favor one polished system over another (such as wet over dry). It only reads the real surface.

Used in conjunction with gloss meters and DOI (distinction of image) meters, ST115 tells a compelling story about the quality of a finish and changes the current discussion of "How long is it going to last?" to "How long can it last?"

### A PDF of the new Standard ST115 can be found online at: \$ www.csda.org/displaycommon.cfm?an=1&subarticlenbr=479

Andy Bowman is president of Adaptive Concrete Innovations. He also serves as the Concrete Sawing & Drilling Association's Polishing Committee chair and as a member of the American Concrete Institute 310 Decorative Concrete Committee. He may be reached at bb@aciconcrete.net.



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BUNG 20-5

## Polished Floor Maintenance Made Easy with a Three-Stage Plan

by Heidi Hudnall and Dan Knuth WITHIN the concrete industry there is a common misconception that polished concrete means no maintenance, when in reality keeping up a polished floor simply requires low maintenance. Steps must be taken to ensure a completed floor maintains its finished look. With this said, we've developed a three-stage process for proper concrete flooring maintenance: restore, protect and maintain.

#### Stage 1: Restore

Anything that drops and is left on a polished surface may penetrate or stain. Stain protectors remedy this. If a liquid sits, it may also etch the surface, especially if the liquid is citric, acidic or caustic. This is where restoration comes into play. Concrete is easy to restore by using diamond-impregnated pads, stripping agents, prep tools and specially formulated cleaners. There are a number of products on the market to aid in this step.

Diamond-impregnated pads can be used to remove scratches and stains and leave a clean surface. They vary in grit sizes, so the condition of the floor determines which pad is used. For instance, coarse and medium grits are more aggressive, so they can lighten the floor and may remove dyes.

Water-based stripping agents remove sealers, as does diamond tooling. Cleaners formulated to rejuvenate, on the other hand, remove dirt and return floors to a



shiny finish. They also help retain color and prevent damage by working with stain protectors, which will be covered in the second stage.

#### Stage 2: Protect

The final step in the actual polishing process involves laying down some sort of protection. Stain protectors and guard products sit on top of the floor surface and eventually wear off, although how quickly depends on the type of foot traffic they get over time.

This is why the final step in the floor maintenance process is vital. Stain protectors, guard protectors, densifiers and sealers are effective and crucial for the final polishing step. Depending on the brand, there are different features and benefits, but as a whole, these products deliver exceptional shine, improve surface performance and resist the effects of traffic wear and weathering. In addition, they are formulated to protect polished, dyed concrete from oil and water-based stains as well as acidic etching agents.

However, there is a new stain resister on the market that has a water repellency component. It is a penetrating resister, a fresh concept for this industry because up until now, protection that penetrates, meaning no burnishing is required after application, was uncommon.

The only reason you would burnish this material is if you overapply and have to remove a leftover haze or film, and in this case, a diamond-impregnated pad in conjunction with a burnisher is recommended.

The new stain resister offers better protection and resistance to liquids than the alternatives, but don't mistake it for a coating. Stains and liquids still must be removed — don't leave them after spillage or semipermanent damage may result.

You can't cut corners with this new stain resister if you want to provide a quality flooring finish. Placing a protector during the honing stage and then burnishing instead of actually polishing is an ineffective method that dulls after several months. Rather, you must polish a surface to at least 800 grit if you want the floor to really shine and maintain its image transfer.

#### Stage 3: Maintain

The final step in the maintenance process is precisely what the name suggests — maintaining, or protecting your investment. Polished and exposed concrete floors are inherently sustainable and very durable, eliminating the need for, and periodic replacement of, applied floor coverings. They are easily cleanable floors with low-impact maintenance requirements, and they eliminate waxing and stripping chemicals, imposing low lifecycle impacts on the environment.

As previously mentioned, though, the type and frequency of maintenance depends on the amount and type of traffic.

A common problem voiced by many people is that they don't know what is safe to use on polished floors. It is easy to assume standard cleaners are appropriate, when really they only succeed in etching the concrete. Instead, we suggest using products that are void of citric, caustic or acidic components that will ruin the finish. The cleaner should be pH-neutral, and therefore safe for the floor, but be aware that some products are pH-neutral, yet still have one of these caustic components. Reading the label is incredibly important in this regard.

Since polished concrete is wearable, guard products should be reapplied periodically. Again, though, this is determined by the frequency of use and traffic. You will know this is essential once the shine diminishes, making it obvious. Also, if the floor is etched by a stain after the polishing process is complete, there are products that fix this more easily than starting back at the beginning with a grinder. Swing machines, scrubbers, buffers and polishers, for example, can each accomplish this.

There is a huge need in the industry for contractors to maintain polished concrete surfaces, meaning a great opportunity exists. By coming back every month or so, depending on the wear, or every week to clean, you can make residual income and generate continued business even after a polishing job is finished. You can offer a maintenance plan or present a suggested maintenance schedule to customers.

Heidi Hudnall is marketing coordinator at Runyon Surface Prep Rental and Supply, an Indianapolis-based distributor of flooring products for prep, polishing and removal. Reach her at heidi@runyoncompanies.com.

Dan Knuth is a former flooring equipment expert at Runyon Surface Prep Rental and Supply.

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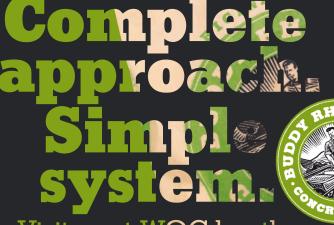


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Sundek of Washington (Chantilly, Va.) installed Sundek Classic Texture, about 7,500 square feet in Pewter Gray, Mission Tan and Clear, for architect Adam Steiner, of Kimley-Horn and Associates Inc., and developer Mill Creek Residential Trust.

The project is an entrant in the 2014 Decorative Concrete Awards, given out by the American Society of Concrete Contractors' Decorative Concrete Council. The winners will be announced at the 2014 World of Concrete.

The installers described the project on their entry form:

"This featured Sundek Classic Texture project brought the elegance of Adam Steiner's creative design work into a stunning reality. The Sundek Classic Texture overlay system with an array of patterns and blended colors achieved a level of visual artistry that matched the newly built highend apartment complex at Dunn Loring.



"Working with the contractor, Mill Creek Residential Trust, it quickly became apparent that Sundek would have to take the lead in certain aspects of the project. Though Sundek was specified for the overlay portion from the design phase, Dick



Krach, Sundek sales representative, was instrumental in working with Mill Creek to bring in (Mill Creek's) Joe Neto for the concrete portion of the project. Joe Neto, in turn, was the head consultant in the formand-pour portion of the pool deck and one of the patios, using Dick Krach's suggestion on expansion joint placement to best suit the concrete's needs but also intertwine with the pattern designed by Adam Steiner.

"The project itself is on the fifth floor of the new high-rise and posed some unique logistics features. Sundek installation began after the first residents had already moved into the building. With this in mind, it was crucial to be discreet and professional at all times to ensure a seamless and nonintrusive installation. The install itself took five days — to complete the pool deck and the patio — with one of those days being a nonwork rain-delayed day.

"The patterns involved were custom and therefore difficult in nature to ensure they matched perfectly to the specified design from Mr. Steiner. All in all, the project went smoothly, and with the project manager being so impressed, Sundek was referred to another Mill Creek project in progress." www.sundekofwashington.com





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<b>2</b>	21"	<b>A</b>	5.5 HP
ß	289 lbs		



HTC GREYLINE<sup>™</sup> GL PS

**123** lbs



HTC GREYLINE<sup>™</sup> 25 D 123 lbs 3.3 HP 200 cfm 230 V 110 V







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