

The Journal of Decorative Concrete Vol. 3 No. 4 • August/September 2003 • \$6.95

## Making The Cut: Diamond Blades

Micro-toppings: Thin Is In Does Your Concrete Lack Fiber? Contest Winner! Gerald Taylor

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#### Greetings ...

ell, I've been here for nine months now, so I guess it's about time I introduced myself.

When I started last November as editor of *Concrete Decor* magazine, I had a lot of experience in journalism but didn't know a thing about concrete.



My first experience with overlayments.

What an amazing education I've had. Becoming a part of this fast-

growing segment of the industry has been an exciting experience. Concrete is a form of endless fascination for me as I've learned about its chemistry and properties as well as its capacity to accept color, pattern and texture.

Many of our readers and advertisers have gone out of their way to make sure I learn how to do things "the right way." I appreciate that, as *Concrete Decor* aims to showcase only the most skilled work in decorative concrete.

The decorative concrete trade is growing rapidly as both contractors and property owners become aware of its many possibilities. It is one of the more lucrative parts of the industry as well as one of the most satisfying for contractors, who enjoy expressing their artistic side as they beautify their surroundings.

As editor, I am responsible for assembling all of the articles and photos that appear in the magazine. I work with a number of excellent freelance writers from around the country, and write an occasional article myself. I also write product profiles and product and industry news sections.

I welcome your input. Please feel free to contact me if you have ideas for topics that you would like to see covered or want to show off a special project that you are particularly proud of. I can be reached at (877) 935-8906 or you can e-mail me at rosemary@protradepub.com.

Sincerely,

Horemany Camopi

Rosemary Camozzi Editor

ON THE COVER: This design was hand-drawn and cut using a 4" turbo blade. Staining was done with acid stains, Miracle Gro and ironite. Project by Gerald Taylor, this year's contest winner.



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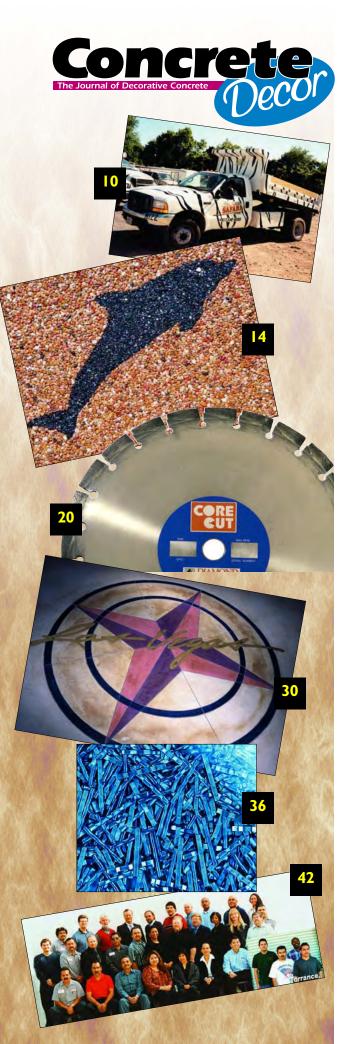
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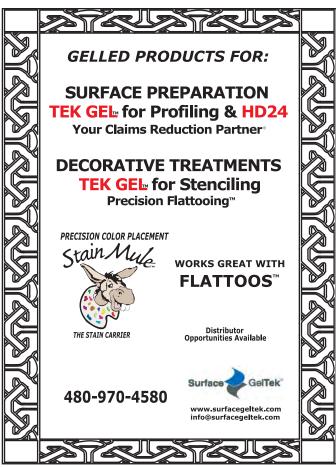
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## DECORATIVE **CONCRETE TIPS**

#### Fixing a crack ... with artistry

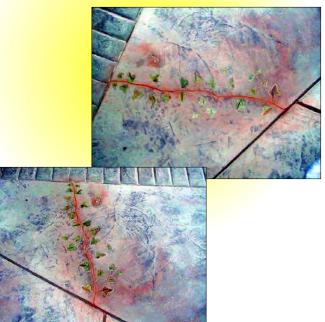
was playing around with some ways to fix cracks in my stamped sidewalk at home. Any kind of patch repair will stick out like a red flag on the textured concrete. I liked the idea of using the crack so it would fit into the look of my sidewalk and still prevent water from undermining the sidewalk.

I took a diamond blade and scored the crack. Next I took a Dremel tool with a diamond bit and carved the outline of the leaves and stems. The plant I copied is an ivy vine. I was trying to make it look like the plant is growing out of the joint.

I used colored tile grout for the stem. Then I added some color to the leaves and sealed it. I'm really happy the way it turned out. I wanted it to look like the plant is growing across the sidewalk.

<u>— Dave White</u>, OPC Sealant





Decorative Concrete Tips is a forum for readers to exchange information about methods, tools, and tricks they've devised. We'll pay for any we publish. Send details to CD Tips, Concrete Decor, P.O. Box 25210, Eugene, OR 97402. We look forward to

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#### New hires at VIC International

Christine Ladd has joined Vic International Corp. as director of purchasing. Her background includes 15 years experience in both purchasing and distribution of aftermarket parts for heavy equipment machinery. She has worked with both domestic and international vendors, routing freight and implementing exclusive relationships with vendors.

Dan Fowler has joined Vic International in the capacity of stone fabrication equipment sales and support. He will be active in sales and support of bridge saws, gantry saws, polishers and CNC machines. Fowler has been in the industry for five years, and has firsthand knowledge of how equipment design and construction will impact customer profits. He has been involved in placing a variety of equipment in operation for companies specializing in specialty work from countertops to cladding and fireplaces.

For more information, visit www.vicintl.com or call 800-423-1634.

#### Chris Ball joins Vector Corrosion Technologies

J. Christopher Ball has rejoined Vector Corrosion Technologies as director, sales and marketing. Ball will be responsible for coordinating and overseeing all specification, sales, and marketing efforts for Vector, a leading supplier of products and services for corrosion mitigation in concrete structures. He will be based out of the Medina, Ohio office.

Ball has more than 11 years of construction industry experience, with a specialty in concrete rehabilitation and corrosion protection systems. He was previously senior market

development manager and product manager concrete repair for Master Builders Inc. in Cleveland, Ohio; business



development manager for Vector Corrosion Technologies in Medina, Ohio; and product manager concrete repair for Fosroc Inc., Georgetown, Ky. Contact Chris Ball at (330) 723-1177.



### Ardex celebrates 25th anniversary

Ardex Engineered Cements is celebrating its 25th anniversary with the release of a special commemorative black mixing barrel, available only until Dec. 31. While the color has changed from red to black, the ease of use, capacity and tool kit inside are unchanged. The tool kit is comprised of five Ardex measuring buckets, pre-measured for precise water control; an Ardex T-1 mixing paddle, contoured to the inside of the barrel for fast and complete mixing; an Ardex T-4 spreader, to gauge the thickness of the product being installed; and an Ardex T-5 smoother, which allows for maximum smoothness and is necessary for feather-edging and touch-ups.

Ardex is a leading manufacturer of specialty cements that are used by flooring and building professionals for substrate preparation, flooring installation, concrete repair and resurfacing. In 2000, Ardex acquired the W.W. Henry Company, the world's largest manufacturer of flooring adhesives used with resilient flooring, carpet, wood and ceramic tile. Both companies are headquartered in Aliquippa, Pa., near Pittsburgh. Visit www.ardex.com for more information.

### Surface Gel Tek expands with new offices

Dan Doolan, owner and operator of Surface Gel Tek, has opened a new office/warehouse in Mesa, Arizona. The new location was needed to serve the expansion demands of the company. Surface Gel Tek has recently signed on Kelly Moore Paints Commercial Coatings Division and Duron Paints & Wallcoverings as additional key customers. The company's products all using patented gelled acid technology — include Tek Gel for profiling (concrete surface preparation), HD24 (heavy-duty profiling and concrete surface preparation) and Tek Gel for Stenciling (for decorative concrete stenciling). For more information, call (480) 970-4580 or visit www.surfacegeltek.com.

#### New Web site for Metal Forms Corp.

Metal Forms Corp. has launched a new Web site, www.metalforms.com. The upgraded site allows visitors to find and access product information more quickly and easily. The company, established in 1909, manufactures Meta Forms (steel forming systems for curb and gutter, paving, barrier and flatwork); Poly Meta Forms (plastic forming system for flatwork and curb/gutter); Speed Screed (concrete finishing machines); and Steel Stakes (nail, form and stringline stakes). For more information, call (414) 964-4550 or visit the new Web site.

### New catalog from Diamond Blades

Diamond Blades has introduced its new *Core Cut* blade catalog, a fullyillustrated 32-page brochure that contains detailed information about the company's line of wet and dry diamond blades, cup grinders, grinding heads, grinding blocks and diamond wire. Many new items are featured in the catalog, which can be obtained by calling (800) 321-5336.



#### Memories of My Dad

Bob Harris II, our featured contractor in the Feb/March 2002 issue of Concrete Decor, died of a stroke on May 24th at the age of 67. Harris was a lifetime devotee of concrete construction who owned his own company in California for many years. He passed on his enthusiasm to his son, Bob Harris III, who was kind enough to share with us some of his memories.

hat a truly great man and father my dad was. He not only dedicated his life to his family but to the field of concrete construction, helping virtually thousands of people along the way.

I suppose my grandfather, who worked on the Hoover Dam pouring concrete, sparked my Dad's interest in concrete. Dad started in the business in Northern California back in 1958 as a concrete finisher, working with my uncle Dino, who also has dedicated his life to the field of concrete construction. After working for years around the state of California as a concrete finisher, my dad and a partner started a highly successful business in 1975.

I remember the business started in our living room with one desk and a phone. My mom was the one on the phone in between taking care of her three children.

At the time, as a kid, I could not understand the long days Dad devoted to the business, many times sacrificing personal times to make the business successful. Later in life, his hard efforts were better understood.

The business grew in the 80s to where they were generating about \$15 million worth of sales annually. In 1993, Dad decided to semi-retire in a 50-or-older subdivision. Holding the status of semi-retired meant that he was up just as early every morning and worked longer in the day. Dad was a



legend in this community, where he used the skills he learned from many of us in the decorative field for staining, skimming, and texturing patios and driveways throughout the community.

In one instance, his next-door neighbors asked my Dad to come over one afternoon and give them a price on a sidewalk from the back patio to the driveway. Dad informed them that the only cost to them was the cost of the concrete. He told them he would try to work it into his schedule. The next morning, at 5:45 A.M., the neighbor was awakened by sounds outside (thinking it was a burglar) only to find that my Dad was driving stakes in the ground while setting forms.

I could write a book on the thousands and thousands of wonderful memories I have of my father but I will stop here. There is no doubt that my Dad is in Heaven forming up new stairways to Heaven or making the existing stairways look even better!

Bob Harris III, formerly director of product training for the Scofield Institute, is now president of the Decorative Concrete Institute.

### Industry Spotlight Association News

#### **ASCC News**

#### Lifetime Achievement Award goes to Dan Anderson

The ASCC will present its Lifetime Achievement Award to Dan Anderson on Sept. 18 at the annual conference in



Dallas. The award is given to outstanding individuals in the industry for the body of their accomplishments furthering concrete construction.

Anderson began his career in the concrete industry in 1969 when he joined the staff of Concrete Construction magazine. From 1985 to 1999 he was president of The Aberdeen Group, which published Concrete Construction and two other industryrelated magazines, and produced The World of Concrete exposition. Anderson organized The World of Concrete in 1975.

He served on the board of directors of the ASCC as well as on several ASCC committees for several years. He is also a past member of the market development committee of the American Concrete Pavement Association, and the promotion committee of the National Ready Mixed Concrete Association. Anderson has been a member of the American Concrete Institute for over 25 years.

### Annual conference highlights decorative concrete

The American Society of Concrete Contractors will hold its annual conference Sept. 18-20 at the Dallas Marriot Quorum Hotel, in Dallas, Texas. The conference, open to all persons interested in the concrete industry, will feature Wally Adamchik, a senior consultant with FMI, as the general session speaker on Sept. 19. Adamchik works with contractors to maximize personnel and organizational productivity and effectiveness.

Seminars and roundtables include topics of interest to CEOs, project managers, estimators, job superintendents, foreman and equipment managers. Several topics are geared toward the decorative concrete industry. Saturday's schedule includes four hours of demonstrations of decorative concrete installation techniques. The cost is \$275 for contractor members and their employees, which includes two dinners, two continental breakfasts, one lunch, all seminars, round tables and conference materials. For more information or to request a registration form, call (866) 788-2722.

#### New board

members elected D. Thomas Ruttura, president of Ruttura & Sons Construction in Farmingdale, N.Y., was elected

president of the ASCC for 2003-2004 at the society's annual meeting in Las Vegas.

Paul A. Albanelli, Farmington Hills, Mich.; Alain Y. Bayoud, San Carlos, Calif.; Donald M. Marks, Fort Lauderdale, Fla.; and Michael J. Schneider, Monroe, Ohio, were elected vice presidents. Glen Shamblen, Tampa, Fla., was elected secretary/treasurer. Ward R. Malisch, Detroit, Mich., and Harry P. Moats, Alpharetta, Ga., were elected to the board of directors.

The Decorative Concrete Council, a specialty council of the ASCC, reelected James D. Engelman, Macungie, Pa., director. Doug Bannister, Oklahoma City, Okla., was re-elected secretary treasurer, and Janine Lutz, Opa-Locka, Fla.; Dionne Hutchings Ojeda, Dallas, Texas; Joe Primavera, Arlington, Texas; and Michael Verlennich, Staples, Minn., were elected as new members of the board.

#### **ACI News**

Bulletin explains chemical admixtures Chemical admixtures can significantly enhance the properties of concrete in both plastic and hardened states. ACI International's newest educational bulletin, Chemical Admixtures for Concrete (E4-03), provides a comprehensive overview of these admixtures and explains how each type works to modify the chemical and physical properties of concrete and to control variability.

The bulletin takes a non-technical approach to a complex topic. In addition to explaining the various ways admixtures can improve concrete performance, it introduces the functions and applications of the following admixture types:

- Air entraining
- Water reducing and set controlling
- Corrosion inhibiting
- Shrinkage reducing
- Admixtures for controlling alkalisilica reactivity
- Admixtures for underwater concreting

The publication also provides information about the dispensing systems ready-mix plants use to accurately measure and inject liquid admixtures into concrete mixtures and the recommended injection sequence for the various classes of admixtures. A list of relevant ASTM standards and an admixture glossary are included for quick reference.

The cost of the 12-page bulletin is \$14.00 for ACI members (nonmember



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price is \$22.50). For more information or to order, call (248) 848-3800 or visit www.concrete.org.

#### **PCA News**

#### Report identifies effect of ingredients on air-void stability

Various investigations throughout North America have revealed that unusually severe winters have caused an inordinate number of reported cases of scaling in concrete. A recent report from the Portland Cement Association, Cement-Alkali Level as it Affects Air-Void Stability, Freeze-Thaw Resistance, and Deicer Scaling Resistance of Concrete (RD128), investigates potential contributors to deterioration in concrete.

This investigation was designed to evaluate the stability of the air-void system, as well as resistance to freezing and thawing and deicer chemicals in concretes containing various generic types of air-entraining admixtures and differing levels of alkalis in cement.

To obtain the report, call (800) 868-6733 or visit www.cement.org/rd128.

#### **NRCMA** News

New hire completes promotion team The National Ready Mix Concrete Association has hired Michael E. Zaldo, of Atlanta, Georgia, as director of concrete promotion throughout the eastern United States. Zaldo has more than 20 years experience in the ready mix, admixture and state association areas of the industry, as well as a bachelor's degree in architecture from Kansas State University. Most recently, he served as a division manager for Atlanta-based Precision Concrete Construction. Previously, he was employed by Master Builders in engineering services and sales. He has also served as director of industry services for the Virginia Ready-Mixed Concrete Association and as a staff architect.



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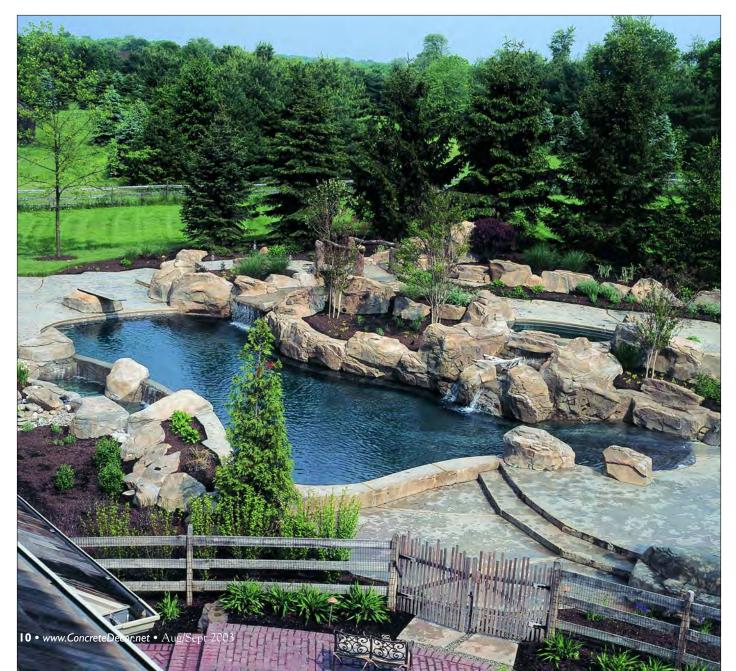
## Architectural **Concrete Design** Levittown, Pa. Chris McMahon is "wild" about concrete

by Stacey Enesey Klemenc

t's a jungle out there, Chris McMahon will tell you. As president of Architectural Concrete Design, a successful decorative concrete company in Levittown, Pa., he knows that in order to stay alive and thrive, you've got to differentiate yourself from the yahoos lurking about.

"You have a lot of people out there with a pickup truck, a wheelbarrow and \$1,000 worth of tools who call themselves your competition," he says. "The level of quality has gone down while the quantity [of contractors] has gone up. You need to have an aggressive approach to the business and get involved if you want to succeed."

He and his wife, Melinda, began their own business stamping concrete



back in 1993. Today, with about 45 employees (including four designers), he estimates the company does between 400 to 500 jobs per year, largely in Pennsylvania, New Jersey, Delaware and Maryland. "We have crews that can place more than 10,000 square feet per day," he says, adding that they not only stamp but also apply a variety of finishes including chemical stains, exposed aggregate and sandblasting. McMahon also offers consulting to other decorative concrete companies.

Their company puts in more pool decks than anything else, McMahon says. A fair share of business also involves driveways, followed by patios and various commercial jobs. They offer turnkey services from consultation and design to installation and follow up, but McMahon stresses that Architectural Concrete Design is a subcontractor that deals exclusively with decorative concrete.

"We don't dig the footings and we don't pour the walls," he firmly maintains, adding that someone else should be handling all that while you're off at another job. "If you want to be a successful decorative contractor, decorative concrete is all you should do."

#### Stay focused and aim true

McMahon notes that some companies have problems because they let their customers dictate the type of work they do. "You have to insist on quality even when the customer doesn't want it." If they're looking to save money and want to forego, say, the color hardener, he says, you've got to refuse to give them a shoddy job. "They need to defer to you as an expert. And if you're not an expert, you're not only hurting yourself, you're hurting everyone in the industry."

He concedes that there is a place for integral color, but says, "Color hardener is the only way to do stamped concrete because it protects the texture. The only way to keep the concrete looking like stone is to make it as hard as stone."

For the finishing touch, he says, he likes to use the "thinnest penetrating sealer available, to protect the concrete from inside."

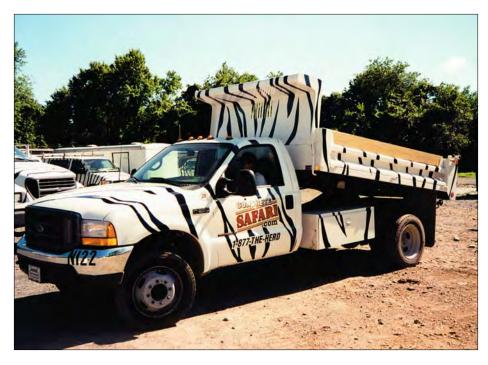


#### Be a hard liner

McMahon swears by aggressive advertising through television, the Internet and high-end magazines. How you advertise and who you advertise to are paramount to creating a strong customer base, he emphasizes.

As part of the campaign that helped to establish he and his wife's fledgling business years ago, they bought the domain www.concretesafari.com — "Concrete jungle was already taken," he laments — and expounded on the safari theme.

"We zebra-striped our trucks," he says, adding that they have since trademarked the look. This eyecatching design helped differentiate their company from the competition in a quick glance and was so successful that he now uses it as part of his consulting service package,





which offers advice to other businesses trying to gain a foothold in the marketplace. "We can take a \$2 million business that's losing money and turn it into a profit-making machine just by changing the way they do things," he says.

He says he will only train crews on the job in real-life situations. "I want them to learn out in the field because the classroom is only theory. It doesn't teach you how to deal with weather conditions or time restraints."

But the company does hold a seminar once a year for about 100 architects from throughout the region. It's an opportunity to familiarize them with finishing textures and teach them about decorative concrete so they can confidently spec it in their jobs.

#### Get ready to rock and roll

You've got to convince your customers, as McMahon reiterates on his Web site, that they don't have to "settle for the ordinary when the extraordinary is so attainable."

So what does Architectural Concrete Design have to offer that is so extraordinary?

Besides stamping jobs that are unlike any others out there (thanks to the four designers on staff) he offers rock sculptures carved by David Bloomfield, a master sculptor from California. Since 1998, he has created a dozen or so of these rock formations. They feature everything from foot bridges and swimin caves with stereo sound to protruding rocks that look like icebergs and erupting volcanoes. Depending on the size, they range from \$40 to \$75 a square foot.

Another product McMahon likes to incorporate is river stone. "We'll take real river stone or another stone and embed it into the surface to make it look like larger stone cast around smaller stone," he says, adding sometime he uses real rock benches or stair sections. "But the coolest thing is to take natural stone banding and use it to separate fields of concrete. The finished product can be awesome."



He's devised his own stamping tools for personal use, is constantly developing new techniques and finessing new textures, and continues to reinvest in new equipment to stay on the cutting edge of decorative concrete. As for his workforce, he says, "We've grown through an extensive training program and are continually putting out new crews. We're growing so much faster than the competition is getting started."

And he plans to keep up this pace. "If you train your workforce right, you should never let them go. You have to establish yourself as a corporation and provide things like 401(k)s and health plans to create a company environment that your employees can be proud of and call their own. Otherwise, you are just training your competition."

If McMahon has his way, both his employees and his customers will heed his advice: "It's a jungle out there. Stay with the herd."





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## An Introduction to Foxy-aggregate Systems

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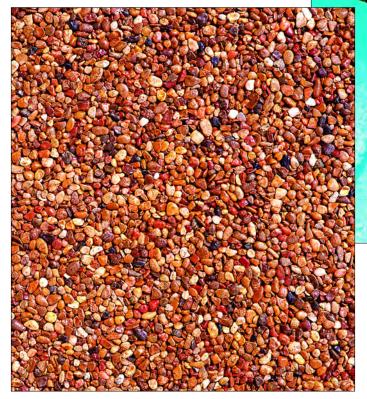
by Susan Brimo-Cox

OPLEANS

**poxy-aggregate.** A simple descriptive phrase for a category of decorative toppings that is anything but simple. As floor systems go, they offer a variety of aesthetically appealing and durable surfaces that are hard to beat. If you've not worked with these products before, this mini-tour may pique your interest.

Generally, epoxy-aggregate systems fall into two broad categories: porous and nonporous — also called "open" and "closed" systems. The porous systems use epoxy-pebble mortar. The nonporous systems include terrazzo systems, troweled epoxy mortars and broadcast epoxy systems.

As with any decorative topping installation, substrate preparation is the most important step. The substrate should be thoroughly prepared according to specific system directions provided by the manufacturer. Also, expansion joints must be honored and active cracks repaired.

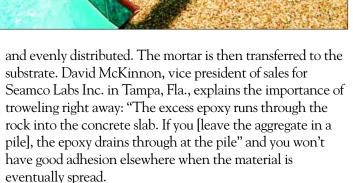


#### **Epoxy-pebble systems**

Contractors agree porous epoxy-pebble systems are the least complicated and have many benefits, including hiding puddles and hiding imperfections in the substrate. The variety of pebble sizes and colors available makes these systems aesthetically pleasing, and it is fairly easy to incorporate borders and designs.

Epoxy-pebble systems are most often used for outdoor applications, such as driveways, pool decks, patios and walkways, but are good for indoors, too. Smaller pebble sizes of ½ to ¼-inch are easier on bare feet. Larger pebble sizes increase the porosity and texture of the surface.

Typically, the epoxy is mixed in a mixer, and then the pebble aggregate is added and mixed until it is well coated

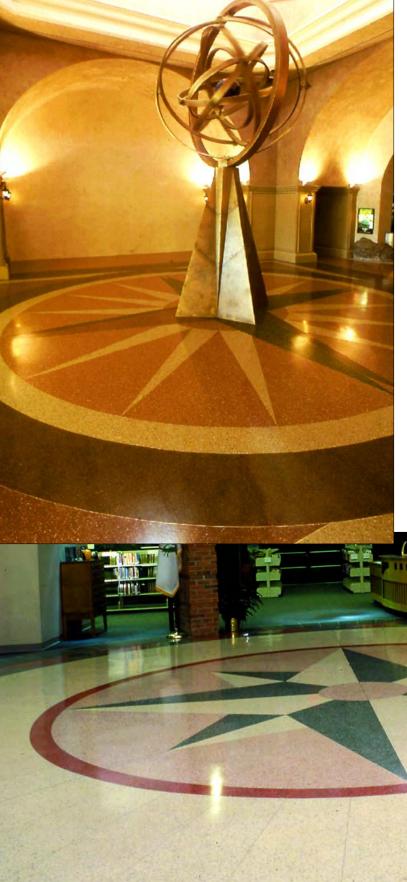


McKinnon says you can trowel these systems as thin as ¼inch to as thick as two to three inches to level a surface, but "the rule of thumb is to install the topping three stones thick to get the proper hiding power and run through on the slab."

Paul Koury, president of Life Deck Specialty Coatings in San Diego, reports these systems have "quick turn-around with very little downtime." To aid troweling, he recommends installers continually wipe their trowel with a solvent to avoid buildup.

The No. 1 negative of these systems is the ambering and degradation of the epoxy in ultraviolet light. Regular maintenance is a must!

Boyan Radovanovic, president of Aggregate Protective Coatings Inc. in Torrance, Calif., explains, "If you don't



maintain it, you'll have problems. The pebbles delaminate and completely fail from one another."

How often you reseal depends on the amount of UV exposure, but typically the decorative system should be recoated every 12 to 15 months if it's in the sun, less frequently if it's in the shade or indoors.

#### **Terrazzo systems**

"Epoxy-terrazzo is the most popular hard-surface flooring today ... in commercial settings. It has the lowest life-cycle cost of any hard surface material," exclaims Robert Cain,

president of Key Resin Co. in Cincinnati. You see it frequently in airports, arenas, sports complexes, train stations, universities, schools and hospitals.

Lifetime floors, you might call them. "They are expensive, but extremely long lasting," Radovanovic says. The expense comes in because "they are labor intensive and require significant downtime in an area."

The aggregate most frequently used in terrazzo





systems is marble, reports Tom Murphy, vice president of marketing for Sherwin-Williams Co.'s General Polymers in Cincinnati. Because the surface of the

mortar is always ground to expose the inside of the aggregate, the size of the aggregate is important in achieving certain surface appearances.

The installation process is lengthy. After preparing the substrate and applying a primer, zinc, aluminum or brass strips are placed in the desired pattern. What you have is kind of a paint-by-numbers grid. "You mix [and apply] one color at a time in panels that are not touching. You don't want color bleed-over from panel to panel," Murphy explains.

The rough grind is next, exposing the marble and the strips. Air pockets opened in this process are grouted with the same color epoxy used in the mortar mix. Then the surface is polished to take off the excess grout and smooth out other inconsistencies. Murphy points out, "The art in terrazzo installation is in the grinding — that's what people see."

Finally, a penetrating sealer closes up the stones and brings out the color.

Basic maintenance is to remove dirt with a dry mop. Terrazzo naturally develops a dull patina, but where a shiny look is desirable, regular application of an acrylic sealer and buffing may be required.

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#### **Troweled epoxy mortars**

These seamless systems work well in lobbies, hallways, kitchen areas, showrooms and similar environments. There are two basic variations: clear resin with colored aggregate or pigmented epoxy with aggregate.

To install, the prepared substrate is primed and the mortar troweled to the desired thickness — usually  $\frac{3}{6}$  to  $\frac{1}{4}$  of an inch. Troweling can be done by hand or by machine. Hand troweling can be tricky and heavy power trowels need a drier mortar to support their weight (and can leave swirl and chatter marks), so a lightweight power trowel might be considered. The surface gets a light sanding to take off imperfections, but not enough to take the color off the aggregate. Leveling is done by trowel, not grinding, in these

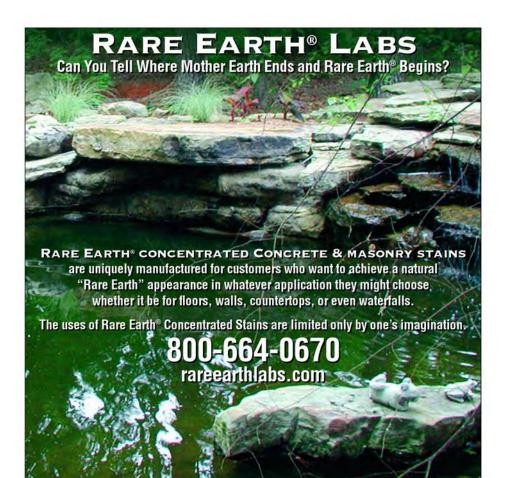
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systems. An epoxy grout coat fills any voids and a topcoat — frequently a urethane — is applied as a sealer.

Howard Sinclair, vice president of sales at Rez Solutions L.L.C. in Lakewood, N.J., says these systems can be "functional or decorative" and are usually low maintenance. "The standard recommendation is to sweep daily and mop with a mild detergent. No resealing is required, except in extreme wear conditions."

#### **Broadcast systems**

The use of these seamless systems is frequent in industrial and commercial applications, such as research labs, locker rooms and restrooms, but is growing in residential applications, particularly garages.

To install, the prepared substrate is primed and a base coat of epoxy is rolled on. While the epoxy is wet, the aggregate — typically fine quartz — is broadcast to full saturation and allowed to bond over night. Excess aggregate is then cleaned away, and another coat of epoxy and aggregate is applied. Sinclair explains, "Each broadcast gives you about ½ of an inch. You reapply multiple times to build up to the desired thickness."

Gwynn Stegen, chief operations officer for Excellent Coatings Inc. in Vista, Calif., cautions that broadcast systems "will telegraph imperfections in the substrate. The system you put on is only as good as the substrate you put it on." But she says these systems are a very creative medium to use. "You can do borders, logos, checkerboard patterns and [you can use] different colors, resins and aggregate. You have the flexibility to let your imagination go wild; limited only by budget."

The last step is the sealer. Grout with epoxy to flatten the surface or use a different topcoat, such as urethane, to help maintain the surface profile, advises Murphy. Decide on the skid-resistance desired and have your customer agree to this before the project starts. Do sample boards with different topcoats.

Cleaning is a simple affair, only complicated by the amount of texture.



Broadcast systems are often used for restrooms and labs because they are durable, easy to clean, seamless and require no wax.

Resealing is generally not needed unless there is heavy traffic.

#### How do they stack up?

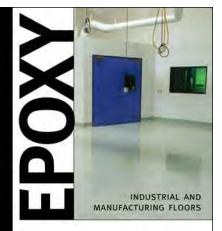
Installation prices vary around the country, but McKinnon estimates that epoxy-pebble systems can run from \$3.50 to \$14 a square foot. Koury strongly advises that contractors base their warranty on reliable maintenance to avoid problems caused by sunlight.

Of the systems which are used mostly on interiors, terrazzo is the most expensive up front, which can cause sticker shock. Murphy recommends having a basic price for simple floors and pricing out logos and detailed patterns separately.

Troweled epoxy mortar systems fall in line next, followed by broadcast systems, which are comparable in cost to other decorative finishes such as stamped toppings, according to Stegen.

While there is growing demand for epoxy-aggregate systems, there is a learning curve. If you're interested, talk to experienced contractors. Most system manufacturers offer training, too. And start with small jobs. Cain observes, "These things are in high demand, but it takes a specialty contractor to do a good job."





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CIRCLE #53 ON READER SERVICE CARD

## Diamonds Are a Guy's Best Friend

... when they're in a saw blade by Christina Camara



utting lines, grooves and control joints with diamond blades is nothing new for concrete contractors, but enterprising craftsmen have been putting their creativity to the test by using the blades to produce decorative borders, graphic designs or V-shaped grooves that look like they were hand-tooled.

Tom Ralston, a third-generation concrete contractor from Santa Cruz, Calif., most often makes decorative saw cuts on interior floors in grid patterns (two-by-two-foot squares or three-bythree-foot diagonals) but says diamond blades can be used to cut any variety of designs.

"You can slice and dice a floor up like a boarding house pie," he says.

Diamond blades can be used to cut both green and cured concrete, using a variety of right-angle grinders, handheld circular saws, Dremel tools or walkbehind saws. A variety of blades are available in the market, each serving its own purpose.

Ralston uses Norton/Clipper Corp.'s Slab Crab, a new saw with wide rubber wheels that allows him to cut perfectly straight lines; a Soff-Cut saw for structural cuts in green concrete; a fourinch grinder to make circular patterns; and a Dremel tool.

He likes to get out on the slab days after it's poured, lay out the design on his hands and knees, snap the lines using orange chalk — which doesn't stain the concrete — and make his cuts, often by hand. The saw cuts can act as small dams, making it easy to use different acid stains in the design without the colors bleeding into one another. For example, he created a unique design on a residential entryway using Italian marble in one section, black acid stain in another, antique amber with bits of real copper in another, and deep score joints filled with copper epoxy.

#### **Blade basics**

A diamond blade is a circular steel disc with a diamond rim, which can be segmented, continuous or serrated. The rims are made up of a mixture of



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CIRCLE #19 ON READER SERVICE CARD

diamonds and metal powders that hold the diamonds in place.

As the blade hits the concrete, this bond wears away, exposing the diamond crystals that grind the material into a fine powder, says Thom Fisher, advertising and trade show manager for Diamond Products, Elyria, Ohio.

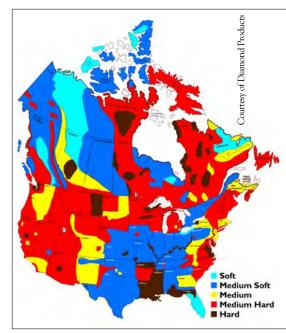
One general rule of thumb is to use a soft bond to cut cured concrete and a hard bond to cut green concrete. A soft bond will expose the diamonds quickly to cut harder materials, while the harder bond will wear away more slowly to cut softer materials. Fisher's company provides contractors with a map that shows how aggregate differs in hardness in various areas of the country — an important consideration in choosing a blade. And if a contractor has trouble with a blade, Diamond Products can provide a custom bond within 48 hours.

Making sure the blade matches the saw is another consideration. "The quality of the blade needs to match up with the horsepower of the saw," he says. "If you're using a small saw for a small job, you don't need a top-quality blade that's loaded with diamonds and costs a fortune."

However, Fisher says contractors will regret choosing blades merely on price, because the industry is loaded with cheap imports — at the World of Concrete show last year, he says, 60 of 65 diamond blade companies were from overseas. "The old axiom, 'You get what you pay for,' really applies here," he says.

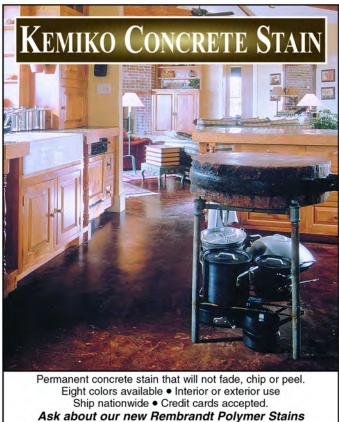
Ted Skaff, market specialist for Pearl Abrasive of Commerce, Calif., says distributors should ask contractors two main questions: "What saw are you using, and what exactly are you cutting?" He's found that more contractors are scoring lines, swirls, circles or other decorative elements in green concrete.

General purpose blades are usually used on cured concrete because using them on green concrete can cause excessive blade wear and undercutting, but Skaff says contractors are having good luck using a general purpose, narrow-slot turbo rim blade to cut green



concrete because decorative concrete lines are shallow — typically only onesixteenth to one eighth-inch deep. "You can have your cake and eat it too," he says. "Not everyone knows that."

Even though a segmented blade will cut faster, decorative concrete contractors are looking for a smooth,



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crisp edge. "A segmented blade tends to chop, as opposed to cutting or grinding. They leave a rougher edge," Skaff says. "That's why we recommend turbo blades, and to break that down even further, a narrow-slot turbo blade is cleaner still. The closer the slots are together the cleaner the cut is going to be."

Soff-Cut International Inc., the industry leader in manufacturing green concrete saws, is offering blades that "chase" existing cuts, carve V-shaped grooves or create rounded edges that produce a hand-tooled effect, says Soff-Cutt's Brenda Nabarette.

Soff-Cut offers an "ultra early entry" dry-cutting system that controls random cracks because control joints can be cut within an hour or two after the finishing process. This relieves internal stresses in the concrete before it dries out and cracks on its own. The profile blades are used after the initial cut to create a decorative look, saving contractors time and money over doing it by hand, Nabarette says.

Rudy Tena, owner of Tennaco Concrete in Eugene, Ore., specializes in large slabs and swears by Soff-Cut as a magic bullet against cracking. "The surface tension isn't there yet because there's still enough water inside the slab, as opposed to if you wait until the next day and try to wet cut it with a water saw, most of your surface tension has cracked." He's cut a floor in a 20,000square-foot building without a crack. A common problem with green cutting is spalling, but Soff-Cut's skidplate prevents that. Tena advises contractors new to green cutting to be careful when making cross cuts. When you're making a T in the slab, those little corners can break off easily, so make sure to use plastic joint protectors and slow the saw down one or two speeds, he says.

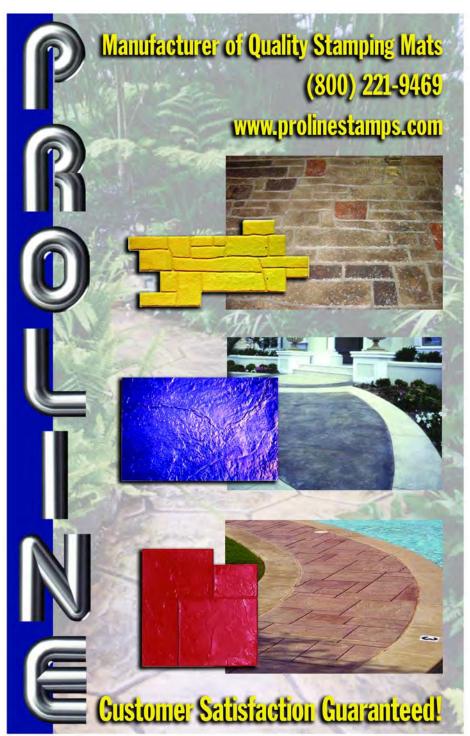
Other early-entry saws include N-E-D Corp.'s Robo-Kut saw, with an adjustable speed blade that reacts to the load on the motor. Torque control keeps a constant load on the blade, even while running through a hard spot.

Besides the walk-behind saws, contractors are using hand-held Skil

Saws, grinders or Dremel tools with diamond bits for fine control. Star Diamond Tools offers a convex blade used with an angle grinder that can cut circles. Their diamond engraving pins can create scored lines and reach tight corners.

Ralston, who often cuts with a handheld saw, advises contractors to use a guide if they're not sure they can cut a straight line. He also suggests that contractors use an eighth-inch round diamond bit on a Dremel tool to get close to a wall without damaging it. And of course, always use a sharp blade.

"Figure extra blades into your bid so you can always have an easy, fast and straight cut," he said. "If you allow your blade to get dull, it can wobble on you and you'll get a real crooked line."



CIRCLE #63 ON READER SERVICE CARD

#### **Dealing with dust**

Dust collection products were once considered luxury items, but are increasingly being mandated by the EPA, OSHA and unions to protect workers from the health hazards of breathing fine silica dust into their lungs.

John Buser, owner of San Diegobased Shave Away, Europe, says the primary reason to use dust control products is to protect workers' health. But there are other reasons: Dust can also shorten the life of power tools, prevent contractors from seeing what they're doing, and make a mess that property owners and sub-contractors hate. "I can tell you that every day a high percentage of our orders are expedited because our customers have been run off the job, or OSHA or EPA has come down and says you have to control the dust."

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#### A learning process

Creative contractors like Ralston find that they can always learn something new by experimenting, even if the results aren't what they expected. What was merely a fix for a mistake on one job can be an effective technique to use on the next project.

"If necessity is the mother of invention, then desperation is the father," he says.

Ralston has a passion for his work and is always looking to imp rove his craft. "Forge forward, don't look back and keep you thoughts fertile,' that's our saying here."

The right blade, and the right craftsman behind it, can certainly create some stunning decorative effects.

CIRCLE #65 ON READER SERVICE CARD

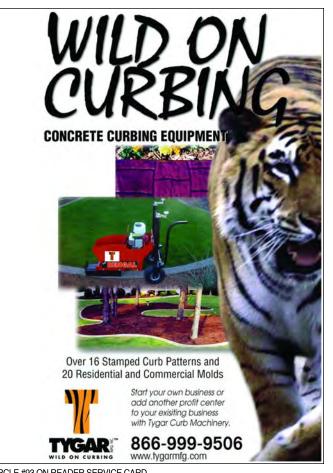


As contractors gain experience in using the tools and methods that will achieve the look they want, diamond blades will no doubt become even more common on decorative concrete job sites.





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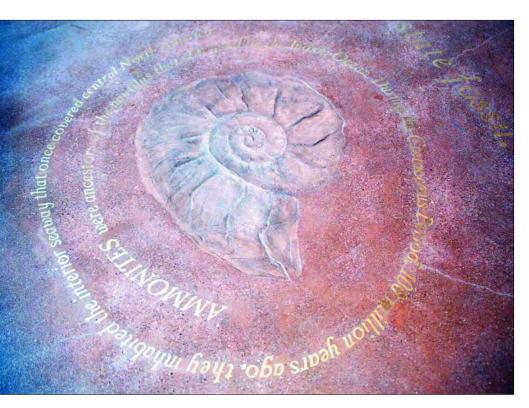
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## Cutting Pictures in Concrete with Diamonds



#### Colorado Hardscapes, Denver, Colo.

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#### Red Rocks Amphitheatre Visitor Center

Shown is integrally colored concrete with brass letters placed in the surface. Custom molds were used to imprint a Stegosaurus and two shell fossils. The concrete was then ground down so the letters were level with the surface of the concrete. The grinding was performed with a retro-plate machine that grinds the concrete to a polished finish.

#### Jeffrey Donius Premier Veneers, Romeo, Mich.

With the use of **Engrave-A-Crete's** custom designed templates and engraving tools, this project gave the owners of this renovated pub exactly the look they were hoping to achieve. A design from the front of a jewelry case in the owner's family was painstakingly re-created and enclosed by a circular border. The long border design was taken from the Engrave-A-Crete catalog.





Engrave-A-Crete, Sarasota, Fla. www.engrave-a-crete.com

#### **Diamonds in the Dining Room**

Shown is a sophisticated design on a concrete floor made by cutting a series of straight lines into the floor. Engrave-A-Crete owner Darryl Adamson made use of his company's Mongoose saw to create diamond shapes on the floor.

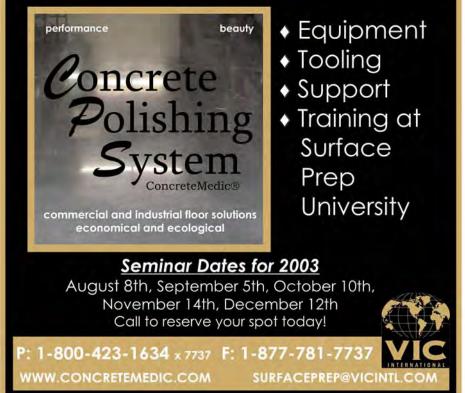


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Straight lines were created using a worm drive saw; arches were done with a saw mounted on a compass-like device. The finely detailed flowers, stems and leaves were created with a diamond wheel mounted on a Dremel tool.

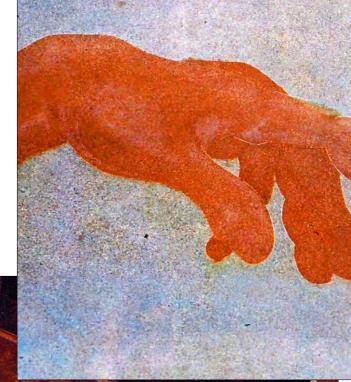
### more than just surface prep



CIRCLE #103 ON READER SERVICE CARD

#### Gerald Taylor Images In Concrete, El Dorado, Ark

In this living room the concrete was cleared of tack strips and glue and then thoroughly cleaned. The lines and flowing curves were drawn freehand using green chalk. With an angle grinder and 4" turbo blade, the lines were meticulously carved into the surface of the concrete prior to staining and sealing. The second photo, which depicts the hand of God pointing to Adam, was taken from a fresco by Michelangelo. This project displays careful outlining of the hand and an exceptional use of stain for coloring and shadowing effects.





Congratulations go to Gerald Taylor for his excellence in design creativity and meticulous use of diamond blades in these examples of his work. Gerald is our first place winner and the recipient of diamond blades from Diamond Products and Ned-Kut Corp.



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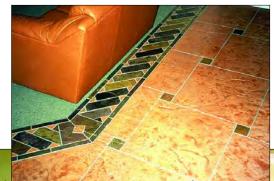
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CIRCLE #101 ON READER SERVICE CARD

# Micro-toppings Offer Beauty and Versatility

by Denise Wendt







rchitectural micro-toppings are as versatile as they are beautiful. Defined by their thickness or lack of it — they are generally between ½-inch and ½-inch thick. They are typically applied with a trowel or squeegee but can also be broom finished.

By contrast, self-levelers generally require at least ¼-inch material and are poured into place. Micro-toppings do not have the flow characteristics or sufficient mass of material to flow and so are not considered self-leveling.

This paper-thin concrete mixture is easy to install and bonds to almost any properly prepared existing surface, including concrete, other overlays, wood, metal, plastic, terrazzo, ceramic tile, marble and asphalt. They should not be used over gypcrete, vinyl or rubber.

Micro-toppings can be used on interior and exterior surfaces, residential and office walls and floors, lobbies, retail walls and floors, decks, patios, ceilings, countertops, showers, masonry, bleachers, food concession areas, waterparks, sidewalks and driveways. "The more flexible the microtopping is, the more versatile it is with regards to what substrates it can be used on top of," says Lee Tizard of Floric Polytech in Rancho Cucamonga, Calif.

Ron Borum of Miracote in Rancho Dominguez, Calif., stresses that these various substrates do need to be in good condition before a micro-topping is applied. "Micro-toppings are not necessarily a solution to resurface distressed concrete," says Borum.

Gary Anderson of Tri-Co Floors in San Diego, Calif., agrees. "Microtoppings can do some flexing, but over time they will crack," says Anderson. "So you need to start with a stable floor."

#### **Cost-savings**

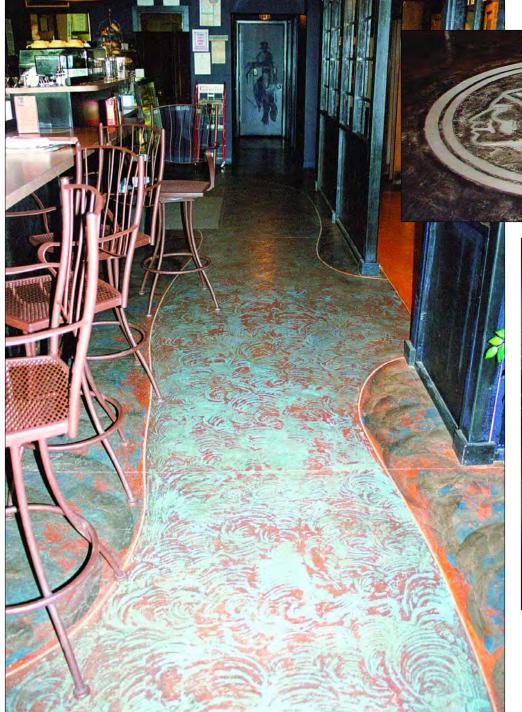
Anderson estimates that micro-toppings can save up to 25 percent compared with using other types of overlayments. Tizard agrees. "Without sealers, microtoppings can start as low as 45 cents per square foot of material," he says. "Selflevelers start at \$1.50 and go to \$3.00 per square foot." Borum adds that wax and maintenance should be figured into the final cost of the system.

Micro-toppings can be more costeffective from a materials standpoint, but they're not always more costeffective from a labor standpoint, says Tizard. "That really depends on what the profile of the job is and how good the contractor is," he says.

#### **Design versatility**

As with other architectural concrete products, you're limited only by your imagination. "We do a lot of things with micro-toppings that other people don't do," says Anderson, who recently installed 23,000 square feet of microtopping on the concession area floors at the Las Vegas Convention Center.

"Micro-toppings offer infinite design, texture and color possibilities," says Borum. And sealer selection affords multipurpose uses, slip resistance, chemical resistance, easy maintenance and cleaning, a variety of gloss levels, and protection.

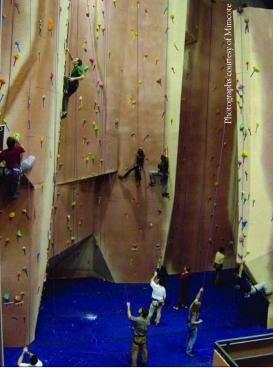


"When used in combination with repair mortars, you can take any existing space and resurface it to make it look like a brand new canvas," says Tizard. "You can incorporate thin-gauge stainless steel inlays into the microtopping using Mylar stencils to create patterns. You can overlay the microtopping with metal and seal it with epoxy to give the effect of terrazzo strips. Sandblasting is often used to achieve the look of a stencil. Micro-toppings can be used on top of self-levelers to enhance features and details of self-levelers. You can achieve a more random look with a slop trowel application method."

#### **Flexible properties**

One of the advantages of micro-toppings over self-levelers has to do with water. "Because micro-toppings don't require the amount of water that self-levelers do, there are fewer inherent shrinkage issues and subsequently fewer problems with shrinkage cracks," explains Tizard.

Most micro-toppings also have a higher percentage of polymer solids than self-levelers, which adds flexibility to the



product. "If you have a really cracked up slab, you can incorporate micro-toppings with fracture-resistant membranes to create a monolithic slab without the effects of cracking," says Tizard.

Our experts generally agree that curling is not an issue with this product. As long as the products are well formulated, curling is not a problem, says Borum, who adds that "some microtoppings are more ridged than others and can be problematic if the substrate moves, expands, contracts or otherwise deforms beyond the micro-topping's ability to withstand the stress."

#### Surface prep

Proper surface preparation is critical when working with any micro-topping. "Achieving a smooth surface





necessitates a mechanic with very good skills," says Bruce Newbrough, technical services manager at Ardex. Newbrough recommends cleaning the surface with mechanical methods only. "Never use acid etching, solvents or adhesive removers," he says.

"These systems are coatings and rely on the formation of an integral bond to the substrate," says Borum. "Surface prep must be directed to achieve this. However, the substrate's hidden problems can be the most troublesome — weak strength, presence of an unknown bond-inhibiting chemical, poor structural design, lack of or misplaced joints an so on."

Anderson stresses the importance of properly preparing your substrate. "Proper prep work is everything. We always shotblast the slab to remove all possible contaminants," says Anderson. "It just gives you a better bite. Sometimes if you've got a contaminant on the floor, you may not even see it. But if you don't properly prepare the floor, those can be your problem areas."

Tizard cautions that if the slab is severely damaged, the repair can become cost-prohibitive. "Then you're better off pouring a self-leveler," he says. Know the extent of the repairs needed before bidding, advises Borum.



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"If blemishes and surface irregularities aren't prefilled and prepatched, then they can telegraph through," says Tizard, who recommends letting any patch dry thoroughly before applying the microtopping. Tizard warns against deepfilling a crack with micro-topping material because it prevents uniform hydration, needed to achieve uniform color. "Hydration has to take place slowly up through the surface," explains Tizard. "If the micro-topping is integrally pigmented, as it hydrates through the surface you will get a much more intense color in that area where the microtopping is thicker because as the hydration is drawn to the surface it draws the pigment with it."

"It also draws the polymer with it," Tizard adds. "So when you acid stain that area with the deep-fill microtopping, that area with a higher concentration of polymer will stain less because there's less free alkali. The area adjacent to the deep-fill will stain darker."

Tizard recommends letting your patch and repair dry thoroughly dry before



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applying the micro-topping. Use nongypsum-based repair materials whenever possible. Tizard recommends applying one coat of micro-topping, letting it dry thoroughly, and then applying a second coat of microtopping. The first coat ensures uniform hydration of the second coat. "By applying two coats of micro-topping you can achieve more uniform hydration, more uniform color and more uniform staining," says Tizard.

Tizard warns against sanding a micro-topping too aggressively. "It is very easy to sand right through it," he says. "So it's important to build your micro-topping with a couple coats so you don't sand through it in one pass."



#### Installation and set-up

Micro-toppings can take anywhere from one to 12 hours to set up. Many are walkable within a few hours. Sun and shade variations, ambient temperature, surface and substrate temperatures, humidity, airflow and wind all affect application and performance.

Set-up also depends on the porosity of your concrete. Porous slabs can draw the moisture out of the micro-topping. "That can make your material set really fast," says Anderson. "If you're going over the top of a sealed floor you've got a lot more open time because there's not moisture being drawn out of the micro-topping."

"Micro-toppings are fairly user-friendly products," says Anderson, "but every job



is different. You can't always follow the manufacturer's instructions. Those are written for ideal conditions and you never get ideal conditions on a job. So there are different things that you have to tweak, but always within a safe tolerance."

Borum offers these tips for a successful installation: Understand the material's limits and have a clear understanding of what the end result needs to be. Use a proven product. Require and receive training. Specialize in several applications. Know your labor and experience limits. Know the conditions of your site. And most important, know the science of the substrate.

#### Maintenance

With proper surface preparation and maintenance, our experts agree that



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micro-toppings can last a lifetime. "Maintenance is everything," say Anderson. "Without proper maintenance, your finishes break down and then you're walking on the product."

She recommends a good quality, easyto-maintain wax. "If you use good quality products to maintain microtoppings, they'll hold up extremely well and be a fairly low-maintenance floor."

"Higher mil, high-solid sealers require less maintenance and give more longevity than do thin-mil sulfinated or water-based sealers," adds Tizard.

"Several coats of a sacrificial wax that can be easily buffed out and then stripped and reapplied as necessary will help to protect the appearance of the topping over time," says Newbrough.

In addition to performing regular cleaning and applying protective sealers and waxes, Borum emphasizes the importance of repairing damaged areas as quickly as possible.





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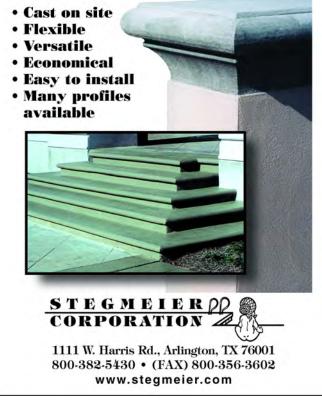
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# Fiber-reinforced Concrete

Builders have been using fibers to reinforce clay, plaster, mortar, and concrete since ancient times. According to the fifth chapter of Exodus, Pharaoh knew the value of fiber reinforcement when he commanded the Jews to find their own straw for making bricks. Later, the Romans used animal hair to strengthen cementitious mortars that are still supporting the Coliseum and other ancient structures.

Now that hair and straw have given way to steel and polymers, fiber reinforcement can benefit concrete projects under many conditions. If you want to color or texture fiber-reinforced concrete, you'll need to know a few tips for keeping your surface looking good.



**Steel or synthetic?** 

Steel and synthetic fibers impart different properties to concrete. Steel fibers (figure 1) impart resistance to bending under load and damage from impacts. They look like straight or crinkly wires a couple of inches long, made of carbon steel or, for corrosive environments, stainless steel. A steel fiber-reinforced slab can be thinner than an unreinforced slab. Architects specify steel fiber reinforcement for projects such as factory floors that must withstand heavy traffic and impacts. Steel fibers are added to a truckload

Pionogram is a Concrete Systems

of concrete during mixing at 0.25% to 1.5% by volume (between 33 and 100 pounds per cubic yard). They are rarely used in decorative concrete.

Synthetic fibers (figure 2), which look like hairs or bundles of hairs an inch or two long, help protect fresh concrete from shrinkage cracking (caused by too-rapid drying of the surface) and thermal cracking (caused by stresses as the concrete heats up during curing and then cools off). Once the concrete has hardened, they help cracked sections hang together, but they don't increase the strength of the concrete once it has hardened. Synthetic fibers also help keep the mix homogeneous by keeping the aggregate from settling out.

Synthetic fibers may be nylon, polypropylene, or glass; exotics such as carbon fiber are sometimes used as a substitute for steel. Like steel fibers, synthetics are added to the truckload during mixing, but in lower quantities — about 0.1% by volume, or 1.5 pounds per cubic yard. Synthetic fibers are also available as mats, which can be helpful when pouring overlays.

What fibers don't do. Although steel fibers give some impact resistance and stiffness to a slab, synthetic fibers don't. Don't expect fibers of either type to increase the space between control joints or to reduce freeze-thaw cracking. For the latter purpose, use air-entraining agents, which make little bubbles in the concrete into which freezing water can harmlessly expand instead of cracking the concrete.

## Steel fibers and decorative techniques

Unless the project's engineering requirements call for steel fiber reinforcement, as in a parking structure or industrial floor, you will not often encounter steel fibers on a decorative concrete job. The manufacturers of steel fibers, such as Nycon and SI Concrete Systems, don't officially recommend stamping concrete that contains their fibers, nor do they recommend exposed-aggregate or burlap-dragged finishes.

Nevertheless, according to Vance Pool, marketing director for SI Concrete Systems, which manufactures both steel and synthetic fibers, a contractor experienced with both stamping and steel fibers can have good results. But if you're new to either stamping or steel fibers, don't try using them both on the same job.

"Steel fibers aren't for heavy relief," Pool explains. A deep stamped impression will expose the fibers. But a shallow stencil impression should be fine. If you're going to use acid stain, make sure that the steel fibers are completely buried; Pool recommends using a laser screed for the purpose. Control joints can be cut with a saw in the normal way.

Bob Zellers, vice president of technology and engineering for Nycon Inc., says he wouldn't use steel fibers in decorative concrete. "If you do hand finishing, the fibers will be exposed to the atmosphere, and they will rust," he says. The fibers can be buried with the use of a laser screed, he says, but that's not often used with decorative concrete.

## Synthetic fibers and decorative techniques

Not only will you find yourself decorating jobs where synthetic fiber reinforcement has been specified, but you also may want to specify this type of reinforcement yourself to reduce shrinkage cracking and plastic cracking. "I use it in just about every job I do that's stamped," says Harlan Baldridge, a decorative concrete contractor in Roseburg, Oregon. He uses it in slabs and also in thin overlays to minimize cracking. "If the customer is paying for decorative concrete, all the reinforcement is warranted. It makes sense for the contractor to protect his interest and do the best quality job." Adding only \$8-\$9 per cubic yard to the cost of the job, synthetic fiber is a cheap insurance policy against cracks.

Nylon vs. polypropylene. Both nylon and polypropylene fibers are compatible with stamping and stenciling, and with integral colors, acid and acrylic stains, and shake-on color hardeners. Nylon is a little more expensive, but the fibers are less likely to emerge from the surface during finishing because they absorb water and have a higher specific gravity (in other words, they don't float as much).

Adding to the choices to ponder, long and short fibers are available, and single-strand and multistrand ("fibrillated" [figure 3]) versions are available. Longer fibers afford more crack protection, but shorter ones are less likely to find their way to the surface during finishing.

Zeller doesn't recommend using fibrillated polypropylene in decorative concrete. "You can get a hairy surface," he says. Monofilament nylon fibers are his first choice.

**Placement and finishing tips.** Tell the readymix supplier what you're doing, and he or she will add fibers to the truckload. No adjustment to the water content is necessary. A quirk of synthetic fibers is that they will cause the concrete to have less slump as measured by a slump test, but the concrete won't actually be stiffer to pour. "There is a loss in slump, but it will take hardly any more energy to move the concrete," Pool says. He emphasizes that no additional water will be necessary; if you do find it necessary to correct the slump, do it with superplasticizers.

Good finishing is essential to keep from dragging the fibers to the surface. As with any concrete, don't get on the surface too early. Pool says that fiber-reinforced concrete bleeds more uniformly than other concrete, so just because you don't see puddles on the surface doesn't mean that the concrete is ready to finish. Use magnesium tools, and don't overtrowel.

Baldridge finds that using color hardener gives extra insurance against the appearance of stray hairs. Any hairs that do pop up will wear away quickly with traffic, or they can be burned off with a propane weed burner.

Control joints can be cut with a saw. If raveled fibers appear at the edges of the cut, stop cutting and come back in half an hour.

If you plan to texture the surface with a broom, make sure you use a stiff-bristled broom, Zeller says. "Pull in one direction and one direction only over a given area," Zellers says. "That way you are aligning the fibers."

#### A useful addition

Synthetic fibers are a good addition to almost any decorative job, whether it's a new slab, a formed wall, or an overlay. Baldridge says he has benefited from taking vendors' classes to become familiar with fibers' effect on slump and to develop the right touch for finishing concrete that contains fibers. Once you become confident about using them, they'll add a margin of security against cracks, which will help keep your work beautiful and your customers happy.









All other photographs courtesy of Nycon

## Concrete Marketplace

is a paid listing of quality-related products. If you would like more information about any of these products, circle the appropriate number on the reader service card found between pages 40 and 41 of this issue.

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# **PRODUCT PROFILES**

#### NeoMix

The NeoMix system, from Cheng Design, makes it easy to create beautiful countertops. The system includes admixtures, customdeveloped pigments, water reducers, semi-precious aggregates, sealer, wax, and finishing pads and tools. All you provide is the appropriate number of bags of sacked concrete mix, which you can buy locally to save on shipping. No inventory or stocking materials to worry about.

Prepackaged kits (available in eight colors) yield 3 cubic feet of countertop (equivalent to 16 square feet at 2 inches thick or 12 square feet at

2½ inches thick). Custom kits are also available to meet the special needs of your project. Forms and accessories, such as sink molds and faucet knockouts, make the process even simpler. They can be used over and over.

"We're trying to make it really convenient and costeffective so that contractors can play with the creative parts of inlaying and making the mold," says Fu-Tung Cheng, author of the best-selling book "Concrete Countertops" (Taunton Press 2003) and founder of Cheng Design.

The profit margin on a completed countertop is considerable, Cheng says. And in addition, because of group rates from manufacturers, members of Cheng's Concrete Exchange receive up to 40 percent discount on the NeoMix system products and accessories. In some cases, prices on items such as diamond pads, grinders and brand-name stainless steel sinks are below wholesale pricing.

Cheng says what normally would have taken four to five hours to whip up now takes only about 50 minutes. "You get the buckets ready, get the mixer ready, open up the sacks and throw 'em in." And contractors are finding out that being associated with the Cheng brand is a great selling point.

For more information on the NeoMix System, visit www.chengdesign.com or call (510) 849-3272.



The Mongoose Concrete Engraver

The Mongoose 411, from Engrave-a-Crete, is a compact engraving saw with a powerful, high-rpm motor. Designed specifically for decorative concrete, it will enable you to easily cut beautiful patterns and designs with great accuracy, whether you're making straight lines or circles.

Made from a solid block of 6061 aluminum, the Mongoose has a spring-loaded head that allows for excellent control. You press down to cut, and when you let up, the blade pops out of the cut. The saw uses 4" diameter blades up to <sup>3</sup>/<sub>8</sub>" wide, and cutting depth is adjustable with the turn of a screw.

To align the Mongoose for a cut, you simply place the front and rear guide/pointers on the chalk line and cut. The guides flip up and out of the way to cut closer to walls. The rear pointer keeps the saw on track when reverse cutting.

The vacuum port, which connects to most standard shop vacs, makes cutting virtually dustless.

With the addition of the optional center pivot and connecting tubes, you can cut perfect circles and arcs. The center pivot has cross hair

> guides with sighting holes to help align it exactly over layout lines.

For more information about the Mongoose, visit www.engrave-a-crete.com or call (800) 884-2114.

#### The Porta Mix Hippo

The Hippo Mixer's easy tilt feature allows contractors to mix, transport and pour materials with unparalleled ease. With a mixing capacity of roughly 18 gallons (or 240 lbs), its high torque, 16-amp, two-speed motor makes it a natural for mixing self-leveling materials more productively while reducing operator fatigue.

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## Manufacturer Profile: Miracote

by John Strieder

ou probably recognize the brand name Miracote. But do you know its naval pedigree? The Miracote story began in the 1930s, when Jack Crossfield developed a way to create coatings that combine natural latex with hydrating cement. Charles Watt and Howard Patch acquired the rights to Crossfield's patent and, in 1938, established Crossfield Products Corp.

The new company concentrated on selling its wares for ship decking. It launched an extensive naval and marine product line and adopted the brand name "Dex-O-Tex," derived from "Decks of latex."

"The original applications included protecting and preserving some of the mothballed military fleet," says Crossfield executive vice president Ronald Borum. The coatings bonded well with steel and weighed less than one alternative, concrete. Just as importantly, they resisted heat and flame. They would not burn even if the ship was bombed.

Today, Miracote utilizes that same technology to protect residential and commercial surfaces from more mundane threats like wear and weather.

The division, which bills its products as "Concrete Renewal Systems for Protecting, Preserving and Restoring Concrete Surfaces," is the fastest growing part of Crossfield. Overall, the decorative market accounts for about a third of Crossfield's business, including sales of concrete, epoxy and terrazzo, says Borum, who is responsible for the Miracote division. "Decorative concrete and concrete repair markets are our signature markets today. We are putting strong effort and growth behind Miracote."

Miracote materials have been used to duplicate the look of imported



Italian tile on a wood substrate in a Colorado residence, waterproof a parking garage, resurface hard glazed tile at a shopping mall and refurbish the walls of grain silos.

Competitors don't offer the depth and breadth of Miracote's product catalog, Borum says. "We have such a broad line. We can take you from concept to completion in products and concept to completion in warranty. That's my challenge in marketing, is to get customers to understand they really can come to us for everything."

The Cementitious Coating System — Miracote's core product — is not paint, but a protective coating. A rubber-like polymer liquid is mixed at application with a silica-free blend of cement and aggregate. The cured product boasts exceptional adhesion and durability, meeting ADA requirements for slip retardance. It comes in 18 colors, plus white and natural gray.

Miracote Micro-topping is a "composition flooring system" consisting of Miracote concrete protective coatings, integral colors, topping colors and sealers. "It's the best of its kind in the market, in my opinion," Borum says.

Miracote Mirastamp is an overlay system that looks like stamped concrete and works as a tough floor. During application, a primer is applied to prepared concrete, after which a pigmented base coat is poured and stamped. Membrane "A", the flagship waterproofing product, is made from a water-based polymer. It's fairly unique in the industry, Borum says. It's highstrength, easy to work with and forms good bonds. It's tough like urethane but environmentally safe too.

Miracote also supports its decorative products with an extensive line of concrete repair mortars.

Today, Crossfield Products Corp. is a closely held corporation based in Rancho Dominguez, Calif. The company operates manufacturing facilities in California and New Jersey. The Watt family continues to be instrumental in the management of the company, with Brad Watt serving as president and CEO.

The ship-deck specialists expanded into the decorative markets in the late 1960s, when a company called Miraco Inc. brought Crossfield a plan to sell protective concrete coatings. Crossfield manufactured them, and Miraco marketed them under the Miracote brand name. When Miraco was dissolved in the late 1980s, the brand name became Crossfield property.

Demand for Miracote products varies by region — for example, the northwest United States sees stronger demand from the concrete repair sector, while Denver-area sales are mostly to decorative contractors. But nationally, demand is split into thirds, between the waterproofing, decorative overlay, and concrete repair and restoration markets. "Our goal is to make the two concrete markets by far the largest part of the business," Borum says.

Miracote products are sold to distributors, who in turn market them to contractors. The growth of that distributor network is one of Crossfield's goals, Borum says.

Miracote also continues to introduce new products. Glazetop XT, a polyurea glazed topcoat that works with a cold process instead of heat, made its debut at this year's World of Concrete conference. "That's proving to be an extremely good product for us," Borum says. Crossfield is still strong at sea. The United States Navy accounts for three fifths of its marine sales market, with the rest accounted for by commercial users of offshore structures such as drilling units. And Miracote waterproofing products are used by tilelayers on everything from shower pans to exterior decks.

Miracote targets the high-end decorative concrete market, Borum says.

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What else sets Miracote apart? "I like to say that we have very good quality control," Borum replies. "We use advanced and proven technologies in the formation of liquid pastes and dry powders. We service well. Those are fairly standard answers. But we back that up. Those are real."

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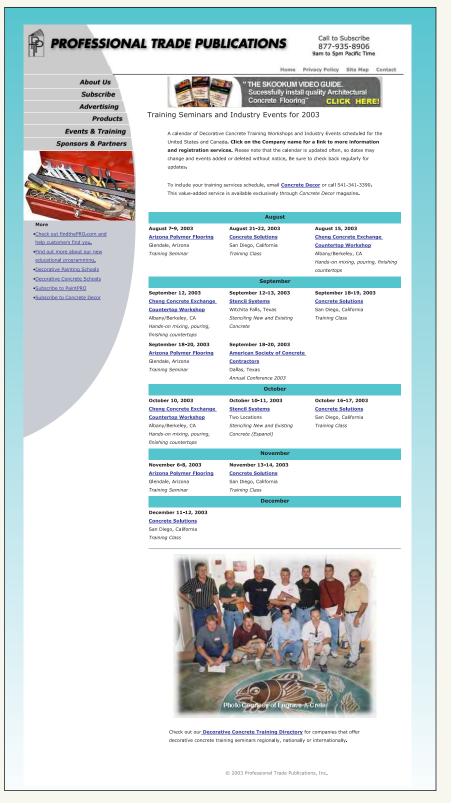
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The new two-way edgers feature a blade made from heavy-gauge blue spring steel that is designed to prevent gouging. They range in size from a 9-inch by 4-inch to a 9-inch by 14-inch and offer a range in radius from 1/8 inch to <sup>3</sup>/<sub>4</sub> inch.

The major benefit is excellent control when edging large areas of concrete, while helping to eliminate bending. To facilitate this advantage, each edger includes a two-way handle attachment that matches with either a Marshalltown #9 or #10 handle (sold separately).

For more information, visit www.marshalltown.com.

#### Sikacrete repairs spalls and overlays

Sikacrete 211, new from Sika, is a pre-extended flowable repair material that may be pumped or poured onto horizontal surfaces and into form work for vertical and overhead surfaces. This material, manufactured with coarse aggregate, may be used for depth repairs from 1" to 6". The material works well for balconies; decks; beams and other structural or non-structural elements of parking garages, bridges and water treatment facilities.

#### Flashlight has beauty and brains

A new series of LED flashlights from Lightwave — the Tec Series — provides 700 hours of light from a fresh set of batteries, as compared to an average of 10 hours for a conventional flashlight. The Tec3000 uses seven superbright light emitting diodes (LEDs), and the Tec2000 uses four. The LEDs are shockproof and reliable — you



won't ever have to change a broken bulb — and last for thousands of hours. The flashlight's industrial grade switch is rated for a minimum of 10,000 operations. Operating cost is about .01 cent per hour, as compared to about 98 cents

per hour for conventional flashlights. The flashlight will pay for itself with only 60 hours of use. For more information, call (858) 270-6016 or visit www.lightwave-usa.com.

#### Trowel line just right for decorative work

Marshalltown has released six new Pointed Trowels to be marketed in its QLT product line. All of the new trowels offer comfort and control with a blue, soft-grip "half-moon" handle (mounted at both ends) that also features finger-guard protection against calluses.

heat and cold. These trowels offer many



point permits finishing in tight corners while the longreach blade allows for troweling under overhangs. Blades, which are made from high-carbon tempered steel, range from 14 inches to 26 inches in length. For more information, visit www.marshalltown.com.

#### Waterproofing coating requires no primer

Barricoat, a new waterproofing coating from Carlisle Coatings & Waterproofing Inc. (CCW), can be used in

a variety of applications including decks, foundations and retaining walls. Barricoat is a water-based, asphalt emulsion modified with a blend of synthetic rubbers and special additives. When sprayed on, it forms a monolithic, highly flexible membrane that cures fast.



Designed as a waterproofing and vapor-retardant membrane, it can be applied to concrete, CMU, wood and/or metal. Its excellent elongation and recovery qualities along with its solid tensile strength and exceptional bonding make it a product that performs exceptionally well over concrete. The Barricoat system enables concrete contractors to create a seamless, fastcuring membrane without the use of primers.

Barricoat is available in two different systems, Barricoat-S and Barricoat-R. Depending on the needs of the project, Barricoat-S offers a single-coat spray application while Barricoat-R offers a double-reinforced roller applied system. For more information, call (800) 527-7092 or visit www.ccwcompanies.com.

#### Seal handles tough jobs

Sika Corp. has introduced SikaProof Seal, a cement-based coating designed for waterproofing concrete and masonry. When mixed with SikaLatex acrylic fortifier, this twocomponent kit is specifically formulated to bond to concrete and masonry by filling small pores and imperfections and creating a watertight seal. It is available in two colors, white and gray, and is easy to mix and place. For more information, visit www.sika-corp.com.

#### Soff-Cut introduces the Prowlers

Soff-Cut International has introduced a new line of earlyentry concrete saws. The Prowler line is designed to be economical and durable, while providing the same quality of performance as the original Soff-Cut saws. The X-2000 Prowler features a 9-hp engine and the X-4000 Prowler has

an 18-hp engine. Both saws are self-propelled by a hydrostatic transmission and come complete with a built-in lifting system, patented safety arbor, safety blade block enclosure and friction drive. Much like the entire line of Soff-Cut saws, the Prowlers work in conjunction with Soff-Cut blades and patented

skid plate technology to allow for Ultra Early Entry concrete cutting, which minimizes chipping and spalling while virtually eliminating random cracking. For more information, call 800-776-3328 or visit www.softcut.com.

## Stone-Weld creates strong bond

VIC International Corp. has introduced into the stone fabrication market a line of unique, water-clear epoxy adhesives under the name Stone-Weld. The penetrating product is unique in that due to its water-thin consistency, it will flow into tiny fissures in the stone, creating a strong bond to help prevent breakage during processing. The adhesives are available in three different consistencies — flowing, gel type and penetrating — and all exhibit the same absolutely clear appearance upon curing. The set-up time is fast, yet of enough duration to assure a strong bond. Many coloring pigments are also available, which bond with the epoxy itself to not only add color but actually increase bond strength. A



slight pink tint in the Part A component assures easy, error-free measuring. For more information about these new products, call 800-423-1634 x 4701 or visit www.vicintl.com.

## Seam clamp holds it together

VIC International has designed a seam clamp that incorporates all the features needed by installers as well as fabrication shops. It features not only a very positive pull-together feature, but also slab levelers to assure perfect alignment. It also has a rubber

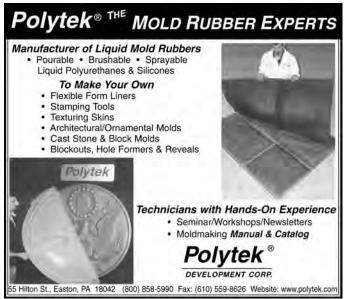


"bumper" that can be used to hold backsplashes in place. The 4" vacuum cups supply enough holding power to pull together 2- and 3-cm pieces. The clamps are available individually or in sets of two in a foam rubber-lined durable plastic carrying case. The vacuum cups have plastic covers to assure long, trouble-free use. For more information, call 800-423-1634 x 4701 or visit www.vicintl.com.

#### Two new trowels from Multiquip

Multiquip has introduced two new trowels, including the first diesel-powered HHN Series mechanical trowel, a 34-hp workhorse with a variable-speed clutch and innovative gearbox design. The

turbocharged, liquid-cooled trowel utilizes two helical gearboxes that operate at 98 percent efficiency and virtually eliminate gearbox overheating. The trowel features five blades, finishes a path 91 inches wide, and has a fuel tank capacity of 4.4 gallons. The variable speed clutch supplies maximum torque and speed under any conditions and the



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trowel comes standard with a twin-nozzle retardant spray system. Other standard features include twin pitch control,

which allows the operator to simultaneously change the pitch of both rotors, and four powerful halogen lights for optimal performance in low-light areas. The brand new CA-Series walkbehind trowel gives operators the ability to finish in tight spaces, through doorways, against walls or to work around difficult obstructions without leaving a trace. The compact CA-4-4H boasts a space-efficient 24-inch diameter for excellent maneuverability and its rotating guard ring glides against walls without marring. The 4-blade trowel is powered by a 4-HP Honda gasoline engine and weighs only 125 pounds. The trowel features a folding handle for easy storage and transportation. Its heavy-duty gearbox delivers the high speeds needed for smooth finishing and the required torque for floating in a wide range of residential and commercial

applications.

For more information, visit www.multiquip.com.

#### Polymer short course on CD

DTW Associates Inc. has released its first short course on CD, titled "Polymer Alloys and Blends." The CD presents a comprehensive review of the state-of-art knowledge in theories, principles and practices related to polymer alloys and blends. Its primary emphasis is on the application of fundamentals to real-world problems.

The principal instructor is Prof. Donald R. Paul, who has led one of the world's major research programs on polymer blends and taught chemical engineering and polymer science and engineering for over 34 years at the University of Texas. The CD, which has more than 10 hours of lectures and 310 slides, is not a video recording of a live presentation. To learn more about this CD and to download a short demo, visit http://dtwassociates.com/?paabcd\_about\_desc\_att\_outl.

## Non-slip, textured coating new from Seal-Krete



Seal-Krete Floor-Tex is a waterborne, acrylic, textured coating that can be applied to concrete, wood, plywood and primed metal. It is designed to provide a non-slip, decorative finish to sidewalks, porches, patios, stairs, ramps, pool decks and more. Neutral in color, Floor-Tex can be mixed with any latex

floor paint or porch/floor enamel to achieve desired color. Floor-Tex is self-priming, easy-to-apply and provides longlasting resistance to UV, moisture, salt and chlorine. It outwears paint, stain, and other conventional anti-skid coatings. For more information, visit www.seal-krete.com.

#### Crack chaser moves right along

The Saw-Tec CC-100 crack chaser, available in gas or electric models, is a high productivity, walk-behind crack-chasing saw

that cuts concrete or asphalt to a 1inch depth. The unit cuts 6 to 8 feet of crack per minute, or up to 3,000 linear feet in a day, depending on the material to be cut. The highly maneuverable saw



features a swivel caster and a retractable control handle, and uses small 5 inch- or 6 inch-diameter dry diamond blades in .25", .375", or .5" widths. The smaller blade allows a tighter turning radius, making it easier to follow random cracks.

Applications include crack repair or expansion joint cleanout in parking garages, parking lots, airport runways, bridge decks, swimming pools and other concrete surfaces. For more information, call (800) 624-7832 or visit www.surfacepreparation.com.

#### Grinder-Vac features new dust shroud

The Sawtec Grinder-Vac concrete grinder features a new, one-piece molded dust shroud that allows for hundreds of

hours of use. The shroud, available in convertible models for edging, combines two different hardnesses of polyurethane for increased performance. The softer material used in the shroud allows for greater flexibility to hug uneven surfaces, while the stiffer material used in the vacuum port provides support for proper hose connection. The Grinder-Vac offers virtually dustfree operation for concrete cleaning, planing and



removal of mastics, epoxies, urethane, paint and other coatings. It controls dust in the work area to allow other trades to work simultaneously and significantly reduce cleanup time. For more information, call (800) 624-7832 or email info@surfacepreparation.com.



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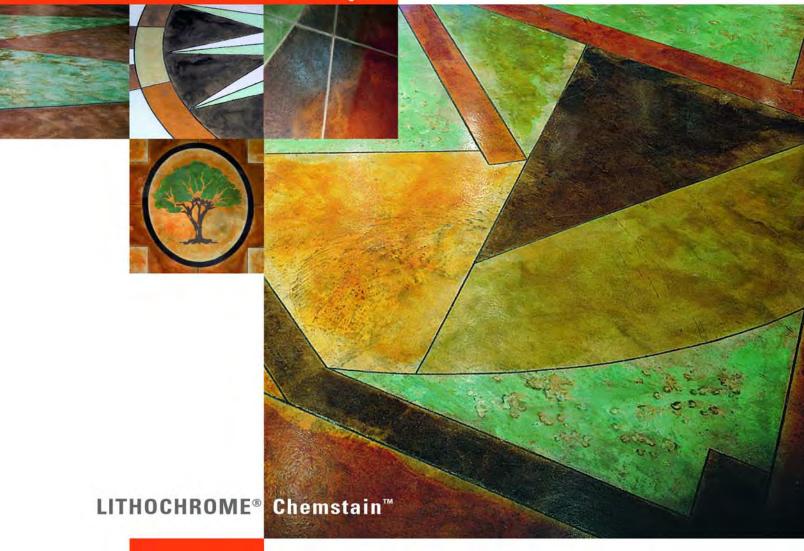
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