

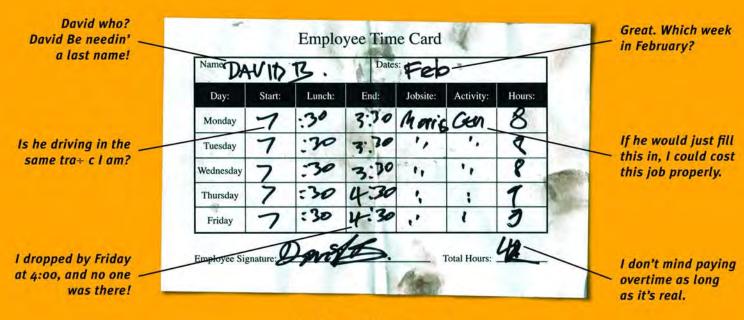


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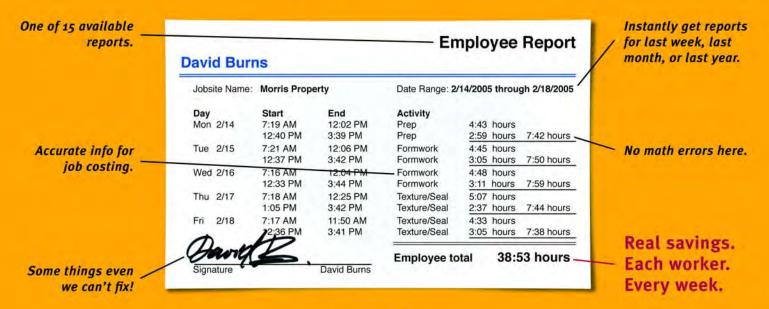
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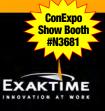
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Welcome to 2005!

ith World of Concrete behind us, we can all take a deep breath and focus on the year to come.

It was great to connect with so many of our readers and advertisers at the show. Decorative concrete continues to attract more and more attention each year, and we are proud to be at the forefront of the industry. We came home to Oregon inspired by the beautiful work we saw and full of ideas for new editorial developments.

We were also fortunate to have the opportunity to sit in on PCA economist Ed Sullivan's economic forecast for 2005. While his facts and figures were geared toward the cement industry as a whole, there was much of interest to the decorative concrete side.

There is no doubt that rising interest rates are slowing the rush of home-buying, but from a historical perspective, single-family starts remain strong. Sullivan expects the tripping rate (when mortgage rates hit 6.5 percent and trigger a noticeable decline in single-family construction) to come in June of this year. But, he adds, this is still

expected to be the third strongest single-family year ever. And there's more good news: Homes are getting bigger and the amount of cement used in the average home is increasing.

States with the highest dependence on residential construction will be strongly affected by rising interest rates in 2006 and beyond, Sullivan says. In Delaware, for example, 40 percent of construction is residential. California is another example of a state with a high dependence on the single-family market.

Sullivan expects substantial growth in non-residential construction, particularly in the public sector. Both industrial and office construction are expected to remain soft this year, although a rebound is expected in the years to follow. But as states raise taxes to fix their deficits, more money will be available for public projects. "When states have money, there is a release of pent-up demand," Sullivan says. "Projects that were put aside still need to be done."

And that's a fresh opportunity for the decorative concrete contractor. As Gerald Taylor of Images in Concrete and art professor Steven Ochs have discovered, almost every public project has funding for public art, which can include decorative concrete. Look for an article by Steven Ochs in an upcoming issue that will offer some ideas for profitable and fulfilling partnerships between artists and contractors.

We also plan to offer — along with a multitude of articles on the latest applications — more tips for growing your business and keeping it healthy. Here's to a great year for us all!

Sincerely,

Bent Mikkelsen, Publisher

Rosemary Camozzi, Editor

Rounay Camori

P.S. Bent is pleased to have been selected as one of three judges for the TechFab/C-GRID 2005 Decor Concrete Design Competition. Read more about it on page 8, and be sure to send in your entry by April 1!

ONTHE COVER: George Lacker of GLC3 Concrete poured and stained this fountain and courtyard area of the Seminole Hard Rock Casino in Hollywood, Fla.







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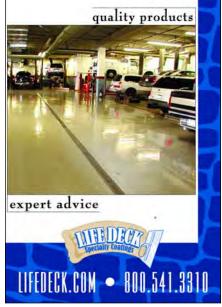
A new column on polished concrete floors begins with a discussion of scratch patterns.

by Peter Wagner

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DECORATIVE CONCRETE TIPS

Decorative Concrete Tips is a forum for readers to exchange information about methods, tools, and tricks they've devised.
Send details to CDTips,
Concrete Decor, P.O. Box 25210,
Eugene, OR 97402.
We look forward to hearing from you!

Creating images with dyes prior to acid staining



Place objects on the floor to create abstract shapes.

Spray water-based dyes on the whole floor. The objects act as resists for the dyes.



Remove the objects and then spray acid stain on the whole floor, allowing all the colors to mingle with each other.

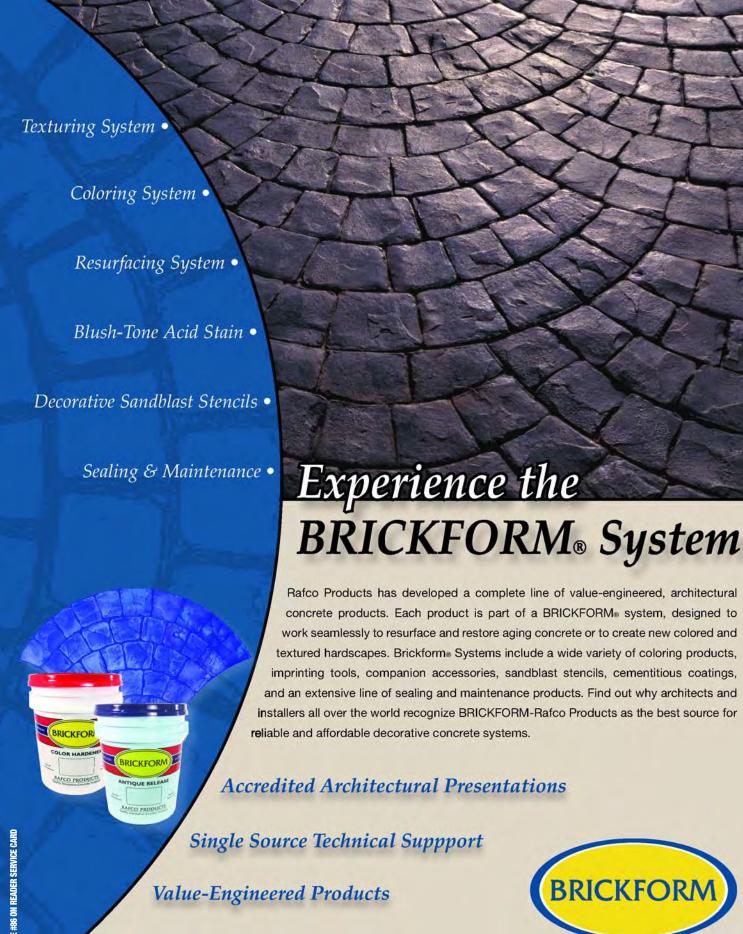
By putting the dyes down before the acid stains, you can open up a much wider range of color than if the acids went down first.

Thanks for this tip go to Victor Pachade of Colormaker Floors.

(www.colormakerfloors.com).







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RAFCO PRODUCTS

Industry News

Consider This

"If the customer doesn't like the final outcome of the color that comes with the stain, you can change it — move the color in a different direction with a dye." Victor Pachade, Colormaker Floors To learn more about dyes, see "Floors to Dye For, " starting on page 16.



Moose feet set in 'crete

A decorative concrete pad forms the base of Metal Forms Corp.'s "Moose Park," created as part of the



company's efforts to beautify its surroundings and celebrate its 95th anniversary.

The company's flexible Poly Meta Forms were used to mold the continuous curves of the pad. The reusable polyethylene forms are strong, lighter than wood, easy to stake accurately, and suitable for straight or radius applications.

The park, an enclosed landscaped area adjacent to the Metal Forms plant in Milwaukee, Wis., is home to two large moose sculptures that stand more than six feet high and weigh nearly 1,000 pounds each. For more information on Metal Forms Corp., visit www.metalforms.com or call (414) 964-4550.

Sika selects veteran New England sales manager

The New Construction division of Sika Corp. has appointed Doug Smith as New England district sales manager.

Smith has 20 years of experience in the concrete construction industry. Prior to joining Sika, he served as New England sales manager for Separation Technologies LLC, a processed fly ash marketer. Smith currently serves as president of the New England Chapter of the



American Concrete Institute, and he is very active in promotional and technical activities for Massachusetts Concrete and Aggregate Producers Association.

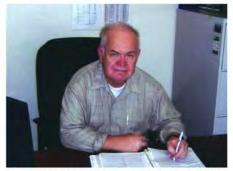
For more information about Sika Corp., visit www.sikausa.com or call (201) 933-8800.

U.S. Gypsum launches certification system

The Industrial Products Division of United States Gypsum Co. has announced the establishment of the LEVELROCK brand Five-Star applicator program. The new system recognizes licensed applicators who follow standards set by the LEVELROCK floor underlayment quality program. The initiative also gives them valuable tools and resources to help them expand their businesses.

Initial benefits of being named a Five-Star applicator include a warranty extension from two years to five years, opportunities to participate in an

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extended warranty program, recognition on product-related Web sites, advertising and other marketing and lead-generation materials, and the use of a special logo.

Qualifying companies have participated in U.S. Gypsum's quality initiatives for at least six months to one year and have received field training from Alcorp Marketing Inc. They must also pass audits and submit job samples.

For more information, contact the Industrial Products Division of United States Gypsum Co. by visiting www.gypsumsolutions.com or calling (800) 487-4431.

New hires at Powers Fasteners

Powers Fasteners Inc., a leading domestic manufacturer of mechanical, adhesive and powder-actuated fastening

systems, recently made several significant appointments.

Robert Brito was hired as branch manager of the Atlanta branch warehouse, giving him outside

sales responsibility for Georgia and

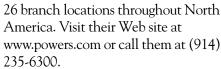


Alabama. Scott Glasnap was named branch manager at the Phoenix warehouse, putting him in charge of outside sales for Arizona. John Partridge was promoted to

branch manager of the New York City

area warehouse, giving him sales responsibility for southern New York, plus all of Connecticut and New Jersey.

Powers Fasteners Inc. is based in New Rochelle, N.Y., and has



Construction trade show planned for Las Vegas

CONEXPO-CON/AGG 2005 and IFPE 2005, the world's largest exposition for the construction, construction materials and power transmission industries, will be held March 15 through March 19, 2005, in Las Vegas, Nev.

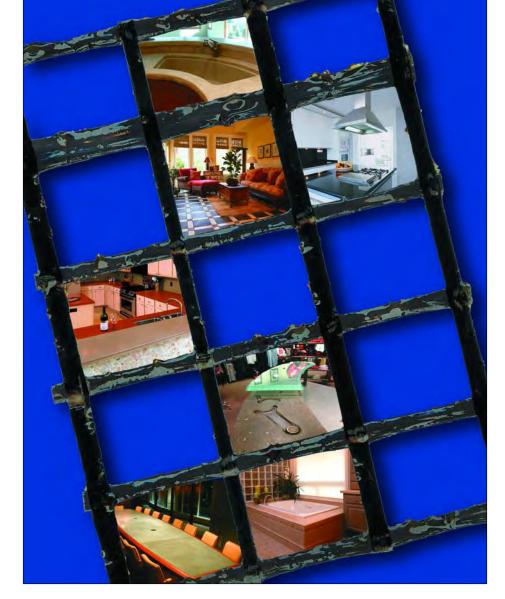
The massive gathering is expected to draw more than 100,000 industry professionals from 120 countries. The event will also attract an estimated 2,100 vendors who will take more than 42 acres of exhibit space. There will be several international exhibit pavilions, an information technology pavilion and more than 80 educational sessions. Hundreds of additional industry meetings will be held in conjunction with this big event.

CONEXPO-CON/AGG, which takes place every three years, is a collaboration between the Association of Equipment Manufacturers, the National Ready-Mixed Concrete Association and the National Stone, Sand & Gravel Association. IFPE is owned by the National Fluid Power Association and CONEXPO-CON/AGG Show Management Services. For more details, visit www.conexpoconagg.com or call (800) 867-6060.

Techfab announces first annual Décor Concrete Design Competition

Want to show off your best work and maybe win a prize to boot? TechFab has announced a Call for Entries for the first annual TechFab/C-GRID Décor Concrete Design Competition.

TechFab is sponsoring the competition to showcase the best and brightest the decorative concrete industry has to offer. The objective is to design and create — using C-GRID reinforcement — an original concrete countertop, vanity, tabletop or architectural décor product suitable for use in residential or commercial applications.



C-GRID is a revolutionary highstrength carbon fiber epoxy grid structure that is stronger and lighter than steel by weight and that provides excellent crack control in concrete treatments.

Judging will be conducted in April 2005. The three judges selected for the 2005 competition are Bent Mikkelsen, publisher, Concrete Decor magazine; Michael Smith, founding partner, Equus Design Group; and Lauriel Leonard, Allied ASID, Dex Studios. Three winners will be announced, and honorable mentions will also be chosen. Most importantly, these designers will be showcased to the industry and recognition given for their creativity.

All entries must have been produced in 2004-2005. Submissions must be received no later than April 1, 2005.

TechFab LLC is headquartered in Anderson, S.C. Send entries to or request more information from John Carson, director of commercial development, at (864) 260-5781 or visit www.techfabllc.com.

New sales manager for Lafarge

Lafarge North America, a leading supplier of construction materials in the United States and Canada, has named Blanche Davidson as assistant sales manager of the Cement Division's Mid America Sales District. Davidson assumes responsibility for sales management in the Cleveland and Pittsburgh markets. For more about Lafarge North America, visit www.lafargenorthamerica.com.



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Industry Spotlight

Association News

AMERICAN CONCRETE INSTITUTE

ACI convention celebrates New York and New Jersey

The American Concrete Institute will hold its 2005 convention April 17 through April 21 in New York City. The theme will be "Concrete Soars, Spans & Supports New York and New Jersey."

The convention will host 37 technical sessions and more than 300 meetings. Additional highlights will include the Edward Nawy Honorary Dinner and a site tour of the World Trade Center.

The convention also offers competitions and events for students from the United States, Canada, Mexico, Iran and other countries. A student luncheon featuring Dr. David P. Billington, professor of civil engineering at Princeton University, will be held April 18, followed by the Student Fellowship Research Showcase highlighting past recipients of the ACI student fellowship program.

The convention is co-hosted by the ACI New Jersey Chapter and the Concrete Industry Board of New York. The American Concrete Institute currently has 16,000 members and 96 chapters in 115 countries. To register, visit www.concrete.org or call (248) 848-3700.

Concrete publications aim to educate, commemorate

The American Concrete Institute announces the release of six new publications.

"ACI 121R-04: Quality
Management System for Concrete
Construction" helps with the
development and implementation of
"quality systems" for concrete
construction projects. A quality system
allows user judgment with respect to
owner needs, defined quality objectives,

project organization skills, and project size, importance and complexity.

"ACI 303R-04: Guide to Cast-in-Place Architectural Concrete Practice" presents recommendations for producing cast-in-place architectural concrete. It discusses the importance of specified materials, forming, concrete placement, curing, inspection and additional treatment.

"ACI 440.4R-04: Prestressing Concrete Structures with FRP Tendons" outlines the history and use of FRPs (fiber-reinforced polymers) in prestressing applications. The document describes the material properties of FRPs and focuses on the state of research and development needed to ensure FRP performance as prestressing reinforcement.

"ACI ITG-3-04: Report on Bridge Decks Free of Steel Reinforcement" outlines procedures for designing bridge decks without steel reinforcement.

"ACI SP 223: Investigating Concrete — Selected Works of Bryant and Katherine Mather" honors Bryant Mather for his significant contributions to concrete technology. The seven-part publication covers concrete potential, cementitious materials, aggregates, durability, petrographic examination of aggregates and concrete, specifications for use of concrete in transportation structures, and research and emerging technologies.

"ACI SP 224: Thin Reinforced Cement-Based Products and Construction Systems" explores recent advances in material science, manufacturing methods, and practical applications of thin reinforced cementitious products.

These publications can be ordered from the American Concrete Institute by visiting www.concrete.org or calling (248) 848-3700.

PORTLAND CEMENT ASSOCIATION PCA elects chair, vice chair

The Portland Cement Association board of directors elected James A. Repman as chairman during the

association's
November board
meeting. Repman,
who will serve a
two-year term, is
president and CEO
of California
Portland Cement.
He has chaired



PCA's education foundation and serves on the executive committee. Charlie Sunderland of Ash Grove Cement was elected vice chairman.

For more about the PCA, visit www.cement.org or call (847) 966-6200.

Learn more about pervious concrete

The Portland Cement Association and the National Ready Mixed Concrete Association have released a reference manual called "Pervious Concrete Pavements."

Pervious concrete is enjoying a resurgence in interest as a paving

material because it allows water to flow through itself, recharging groundwater and minimizing storm water runoff. The guidebook introduces readers to pervious concrete's applications and



engineering properties, including environmental benefits, structural properties and durability. Hydraulic and structural designs of pervious concrete pavements are discussed, as are construction techniques.

For more information visit the PCA Bookstore at www.cement.org/bookstore. Orders can also be placed by calling (800) 868-6733 or (847) 972-9040.

AMERICAN SOCIETY OF CONCRETE CONTRACTORS Don't miss the Spring Fling!

The Decorative Concrete Council, a specialty council of the American Society of Concrete Contractors, will hold its spring event April 28 through April 30 at the Embassy Suites Hotel, Columbia, S.C. The event includes seminars on business topics for owners and managers of decorative concrete contracting firms as well as demonstrations of decorative concrete installations.

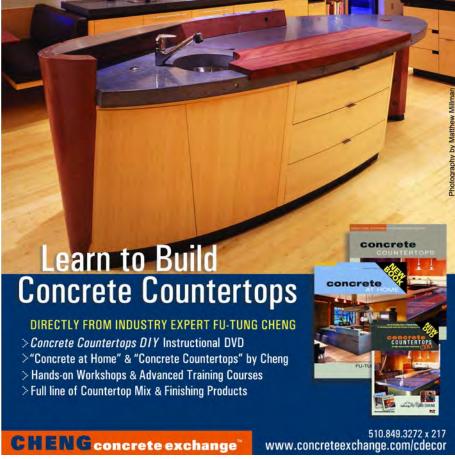
Seminar topics will include "How to Get Started," "Keys to Success," "Show Me the Money," and a preview of the demonstration techniques. Speakers include World of Concrete presenters Bob Harris of the Decorative Concrete Institute and Frank Lewis of The Coatings Group. Concrete stamping, stenciling, staining, scoring, acid etching, overlay systems and countertops will be demonstrated on Saturday at Specialty Concrete Products, 1327 Lake Dogwood Drive, West Columbia.

The ACI flatwork finisher class and examination will be offered at the event.

The DCC is made up of decorative concrete contractors, manufacturers, and other interested parties. The mission of the organization is to advance the quality and use of decorative concrete systems for both horizontal and vertical applications. For more information contact the ASCC at (866) 788-2722 or visit www.ascconline.org.



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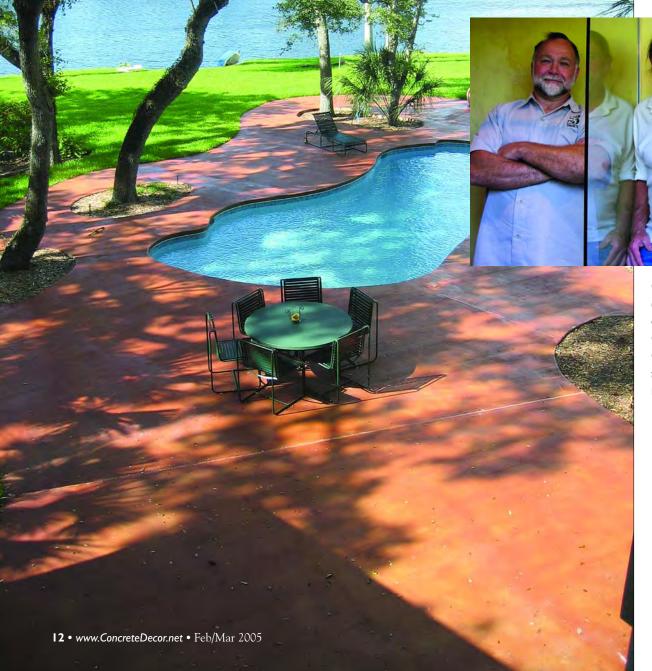
CIRCLE #12 ON READER SERVICE CARD



GLC3 Concrete Fort Lauderdale, Fla. George Lacker moves from the ordinary to

George Lacker moves from the ordinary to the extraordinary by Stacey Enesey Klemenc eorge Lacker III, president of GLC3 Concrete in Fort Lauderdale — a company whose moniker coincides with the initials of both the owner and "greatlooking concrete" — has been in the concrete business for more than 30 years. Although his roots are firmly planted in the ordinary gray variety, his present and future involve extraordinary creations.

When he was only 16 years old, Lacker got his footing in the business back in Ohio, pouring industrial floors for Baker Concrete and learning the ropes from the boss himself. "Dan Baker was always so positive," he remembers. "We'd complain we didn't know how we'd get



George Lacker (right) owner of GLC3 Concrete and Geoff Kemp, senior project manager. something done and he'd say, 'You guys will figure it out." Then Baker would sit down and draw a diagram of the job, including little stick figures so the crew could see how many people were needed for the job and who would do what.

In 1980, Lacker moved to Florida, where most of his work still involved working with regular concrete. On the decorative front, he tinkered with rock salt finishes, colored concrete and a variety of exposed rock and shells, services he still offers today. However, in 1996 his whole direction began to change when he traveled to Oklahoma to stain his father-in-law's floor. "That's when I caught the bug," Lacker recalls, referring to the fervor he felt about the acid-etch chemical staining process.

He was gung-ho about chemical stains but the Floridians he encountered weren't wild about the dark colors in his palette. Business floundered. Then in 1998, Lacker had the opportunity to hook up with Mike Miller, president of California-based The Concretist and a well-known consultant to the decorative concrete industry. Lacker had poured the floors for the Dolphin Mall in Miami and Miller was involved with the aesthetics of finishing them.

"Mike is a concrete guru," Lacker says about his now good friend, and he learned a lot from him during this initial encounter. With his confidence bolstered and some newfound knowledge about lighter colors under his belt, Lacker resigned from his job and went into business for himself.

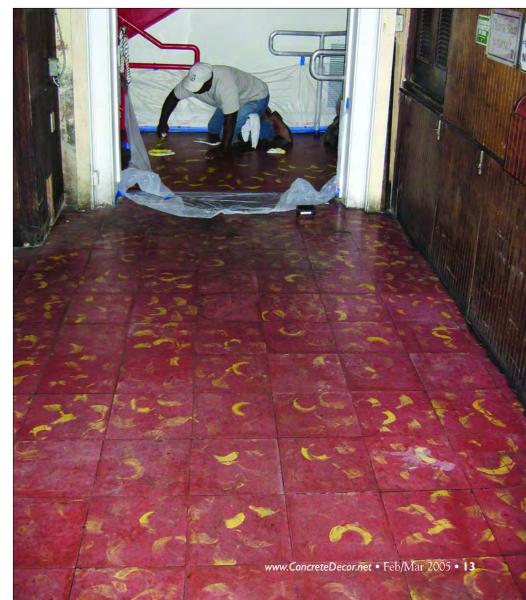
"If you're just getting started [in decorative concrete], the best advice I can give you is to find somebody who knows what they're doing and become their friend," says Lacker, who founded GLC3 in 1999. Probably the best venue for this is the World of Concrete, which attracts experts from everywhere, he adds. "It's easier and more profitable to get people in different parts of the country to help you out than it is to get help from your competition."

In addition to establishing relationships with those in the know, he













says, make sure you keep abreast with the industry by taking classes and attending seminars. This way you'll not only keep up with the latest developments but you'll learn the lingo customers expect to hear. "Architects want to hear the latest terminology," he says, and speaking their language may help you land the job.

And if there's one thing he's learned during these past 30-something years, it's that samples will sell your work, too. "Whenever I give a seminar, I preach 'sample, sample, sample, "he says. Practice around the house. Try out new color combinations and designs. Do samples and set them outside to weather. "Practicing will let you see where you may have problems." And it's the best way to show clients what to expect.

"One of the biggest problems we have is that we haven't educated the architects and general contractors about what can and cannot be achieved with acid staining. I'd say about 20 percent of them still don't know that the colors in an acid wash are supposed to be inconsistent," he says. They also don't want to spend the extra money to protect the floors during the construction phase, and then they complain about spills and unwanted stains.

If the architect or GC wants consistency, he continues, they'd be better off with a polished integrally colored floor. "The color is a lot more consistent and the floor is more durable than acid stain." If acid staining is the chosen method, be sure to let the clients know that a good maintenance program is key to keeping the floor looking good for years to come. "This can't be stressed enough," Lacker says.

Today and beyond

Lacker's work today largely involves acid staining and polishing concrete floors for commercial establishments throughout Florida, including such big names as the Hard Rock Cafe in Hollywood, the Ritz-Carlton in West Palm Beach and Sloppy Joe's in Key West.

Unusual requests are what he likes best. "If they can think it, we can



produce it," he says. "We like to do things that nobody's done before," adding that he creates many of his finishes using microtoppings with polymer-modified cement and a large dose of imagination. Some of his best creations, he confesses, are developed when he's just "fiddling around." For instance, for one job, he spent hours preparing samples and then just threw one together for variety. "I threw some colors down, did a real fast trowel, threw another color down and sanded it. The second color filled in the voids left by the colors on the first trowel. It made a really unusual pattern and it was done really fast." And that's the one the customer picked.

"Concrete is poetry," he says, and you never know what will appeal to whom. "We're creating something that wasn't there before and we're doing it any way we have to, with microtoppings, poured-in place, acid stain, integral and cast-on color. Bringing all these elements together can get complicated. But our goal is to be able to do the job as simply as possible and just have the results look complicated."

He says a lot of his business right now — and he anticipates much more in the future — involves floors that used to be tiled or carpeted. "That's why we're working to perfect a half-inch pour that can be stained or polished. We're removing a half-inch of carpet and replacing it with concrete," he says. He can even successfully pour concrete on top of a wood floor, a feat he's proud to point out. "I can do it because I know how to cure the concrete."

Don't be afraid to try new things with concrete but always read the manufacturer's instructions, Lacker advises, for a good basic understanding. And above all, learn from your mistakes because mistakes are going to happen. "You don't get good at something without screwing something up," he says. And experience pays. "I may not be the cheapest person to hire," Lacker says, "but I've learned that people who don't have the money to hire me in the beginning always have the money when it comes time to fix things that didn't turn out right."

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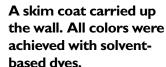


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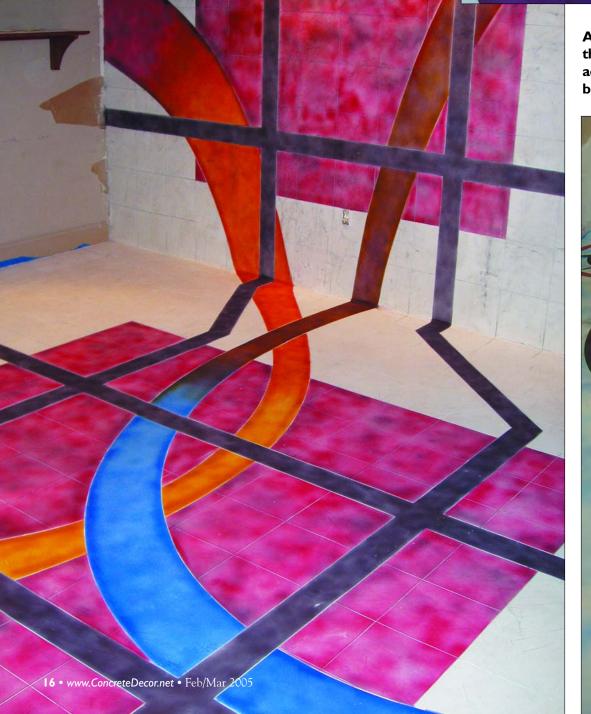
Floors to Dye For!

Dyes can broaden your color palette, create subtle effects not possible with other coloring agents, and fix problems with acid stain applications.

by David Thompson







he only reason so few contractors use dyes for coloring concrete is because so few contractors know you *can* use dyes for coloring concrete.

But not only can you use them, you can vastly expand your color palette with them.

With dyes you can get virtually any color under the sun — or at least on the color wheel. And you can get brighter, more vibrant colors than you can get with acid stains, which are limited to a narrow range of earth tones. If that weren't enough, dyes can also save your butt when good acid staining goes bad.

Like acid stains, dyes are translucent. But unlike acid stains, they don't chemically react with concrete. You don't get the color variegation with a dye that you get with an acid stain. In fact, you don't get any variegation at all. Instead, you get predictability.







These photographs all show skim coated floors with dyes, stains and epoxies. The blue variations and the sky on the floor to the left were all created with dyes.



In order to achieve the deepest black, the diamonds were first acidstained and then treated

with two dye washes.

By using different dilutions of dyes and blending them together, Brian Vicari created a watercolor effect in this bathroom.



"What you see going down is the color it will be when all is said and done," says Mike Miller, managing principal of The Concretist Inc. "You can almost think about dyes like lighting in a theater, where you've got lights with colored filters over them. If you shift to an orange filter, everything on stage looks orange. That's kind of what happens with a dye."

Of course, tinting strength and penetration will vary depending on the characteristics of the concrete you are working with.

Dyes can be used in conjunction with acid stains or all on their own.

On their own they supply a cementitious surface with the even-across-the-board color shift of stage lighting. They can be layered for a variegated effect, but the variegation is entirely in the hands of the artisan. (For example, Bob Harris, president of the Decorative Concrete Institute, sprays dyes along the ripped edge of paper for a marbled look). When used with acid stains, they can provide accent colors, color layering and depth, and shifts in color extending far beyond the earth tones of acid stains.

As a butt-saving tool, dyes can set things right when unruly acid stains don't do what you want them to. Occasionally an acid stain will fail to react on a patch of a cementitious surface; dyes can be used to mask the imperfection. They can also be employed to shift the entire color of an underlying stain. "If the customer doesn't like the final outcome of the

This floor, formerly covered by

resurfaced with Colormaker Floors'

carpet, linoleum and tile, was

"Pentimento"

and then acid

stained. Brian

dyes to add

floor to the

that was

requested.

specific color

Vicari then used

depth and shift

the color of the

color that comes with the stain, you can change it — move the color in a different direction with a dye," says Victor Pachade of Colormaker Floors.

Choose your base for varying effects

Both water-based and solvent-based dyes are available, and each can be found either in solution or in powder or liquid concentrates.

Water-based dyes offer a pastel, watercolor look, which can work nicely when layers of color are called for.

When used at full strength, solventbased dyes produce bold colors. Solvents quickly carry molecules of dye into the concrete and then rapidly evaporate, leaving deeply saturated hues.

Ricardo Hernandez, owner of Concrete Countertops in Hollywood, Florida, takes advantage of the variety of colors and saturation characteristics of dyes to create faux stone effects on his countertops. He uses water-based dyes for producing weathered stone, and he uses solvent-based dyes for more dramatic looks. "I can make a countertop look like a piece of jade or a piece of turquoise with dyes," he says. "You can't achieve that look with acid stain."

Solvent-based dyes typically come in primary and secondary colors, which are mixed to form other colors. DecoSup's line of solvent-based dyes, for instance, includes red, yellow, blue, brown, black, green, orange and purple.

Water-based dyes come in mix-'emyourself basic colors, too, though some manufacturers sell them ready-mixed. The Super Stone line of water-based dyes, for example, includes 30 colors. "We've got everything from greens to yellows to grays to pinks to all sorts of peachy colors," says Tony Catlett, Super Stone's recently retired general manager.

Both water- and solvent based dyes can be diluted for less saturated color. Super Stone, for instance, recommends diluting its solvent-based dyes by half for pastels, and by 10:1 for light color casts. Some artisans start out with extremely high dilutions, then work their way back up with layers of less diluted dye. Quick-

drying solvents lend themselves well to this approach. "I always dilute like 90:1, and then I get a feel for it, see how it's going to be reacting, and then I start applying more color," says Hernandez. "Once you've applied too much, there's no turning back."

Application and prep

Floors have to be thoroughly cleaned and absolutely dry before applying dyes.

The more porous a floor, the better it will accept dye. Hard-troweled or other closed surfaces might need to be opened up with an acid etch.

Both types of dyes can be applied in the same ways acid stains can be applied: with airless sprayers, brushes, rollers, sponges, etc. But dyes are a little trickier to work with than stains. For one thing, a knowledge of color theory (red plus yellow equals green, for



example) is required to mix colors successfully. And dyes behave differently than stains. Water-based dyes evaporate slowly and will leave rings if allowed to pool. Solvent-based dyes evaporate rapidly and require a deft touch. "You've really got to play with them a few times before you use them," says Art Pinto, president of DecoSup. "Especially the solvent-based dyes — they evaporate so quickly, you've really got to know how

to apply them and spray them so you don't leave brush marks.'

But unlike stains, which leave residue that must be scrubbed off, dves are applied, left to dry — and that's it.

Dyes can be used indoors and outdoors, but they're not as resistant to ultraviolet light as acid stains are. And if they're not sealed, they're subject to washing away, since dyes don't actually bond to concrete like stains do. A good



UV resistant sealer can solve both problems at once. Bob Harris recommends avoiding the boldest dye colors for outdoor use. "I would not use a very intense color outside, such as a bright red, a bright yellow or a bright blue, for fear that you could get some fading," he says. "But we've found that when you combine primary colors — to make a brown or a tan or something we seem to get less fading." He's been testing Colormaker's water-based Someru dyes outdoors with a sealer. In the past two and a half years he's found no discernable fading in the dyes.

One caveat about applying sealer with a roller: The roller may pick up dye and move it to other parts of the floor. If there's a risk of spreading the dye to areas where you don't want it, consider rolling each section of the floor with a separate roller, or just spraying on the sealer.

Handle with care

Another dye caveat: Solvent-based dyes can be particularly hazardous to work with. Stories of vapors igniting, injuring workers and burning down job sites are all too common. Even pros like Mike Miller have horror stories. Miller was working with dye in a basement that the homeowner had prepped and masked before Miller got there. The pilot light on a heater hiding behind a masked-off closet set the floor Miller was working on ablaze. "Fumes ignited and whatever liquid was still left on the floor burned. I was right in the middle of it," he says. "I was burned bad enough to be in the hospital for a month. Ended up with skin grafts, and things like that."

So be careful. Dyes can vastly expand your color palette and save your butt in a pinch - but those with solvents must be handled with care.



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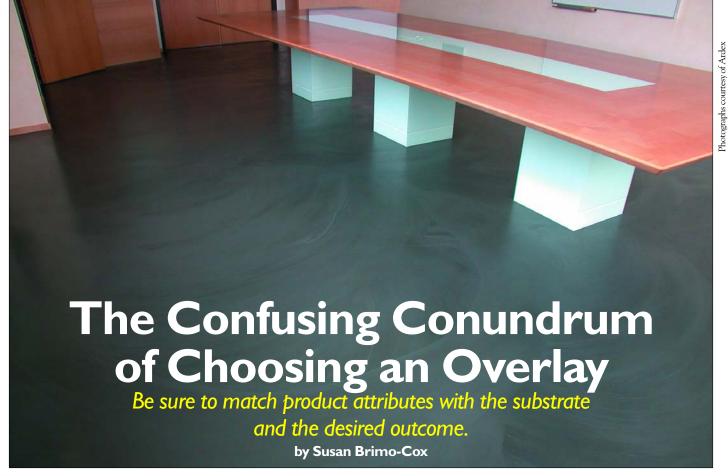
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verlays. Have you looked at how many there are for you to choose from these days?

As Ken Freestone, director of technical engineering at Elite Crete Systems Inc., aptly observes: "It seems like every year there are new overlay products released to the industry. Where splatter textures and plain gray restoration coats once dominated the concrete overlay industry, consumers now have virtually unlimited choices of color, texture, and thickness."

There are self-leveling products, microtoppings, trowelable mortar toppings, epoxy mortar toppings, stampable products, stencilgrade products, splatter/knock-down products, and more. How do you choose?

"The primary considerations will relate to the look the customer is trying to achieve and the substrate that the installer is working with," says Ben Mack, manager of national accounts at Ardex Engineered Cements.

Parameters of the project will also help narrow the selection. For example, "Over large areas, a selfleveling topping may be used because the installer can cover a large area as each batch of material is poured," Mack explains. In other situations a This
conference
room floor was
finished with
Ardex SD-T
Gray, a selfdrying, selfleveling
topping.

Ardex SD-T with topical acid staining.



self-leveling product may not be appropriate, as on stairs.

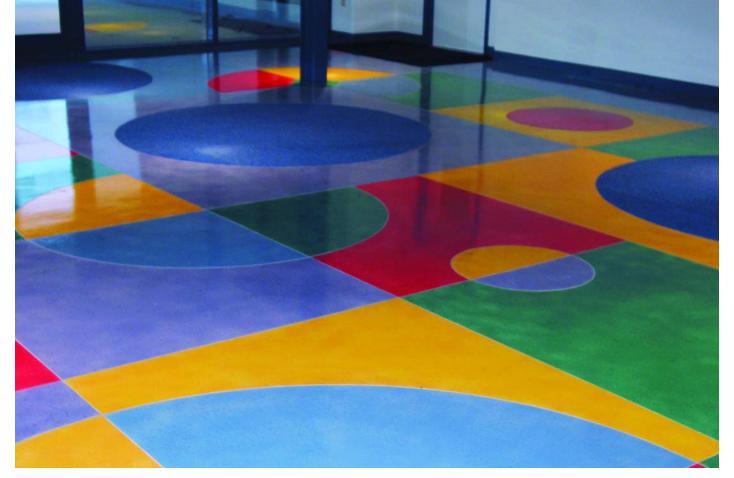
Consider the substrate

The substrate over which you are applying an overlay is a critical component to your selection process.

If you are planning to overlay an interior ongrade slab, the options are wide open. As Scott Thome, director of product services for L.M. Scofield, explains, "If there is a normal amount of moisture, any overlays will work. That's their intended use." For exterior grade slab applications, stamp-grade, stencil-grade, and trowel and spray products will work, he says.

Be careful, however, when applying an overlay over an existing overlay. Lee Tizard, vice president of Floric Polytech Inc., says the problem with overlaying an overlay is that you rarely find an overlay that hasn't been sealed. The issue then becomes the recoatability over sealers. You may find you are better off removing the base overlay and starting over.

Your choices also become more limited when applying an overlay system to substrates other than concrete, such as wood subflooring, terrazzo, tile, gypsumbased flooring and others.



Mack, of Ardex, explains, "It is difficult to install a product over wood without using some sort of system to help stabilize the wood from movement." Also, he explains, any type of structure that has the potential to cause movement (such as the second level of a mall store), will cause the topping to crack.

You need to take a good look at the subfloor structure. Is it built solid? Is there a threshold joint? If there is flex in the deck, you have to figure that in. As Thome points out, "The thinner the overlay, the more deflection and vibration it can take, but it can't take sheer, side-to-side movement."

In some cases you may be able to use fractureresistant or fracture-isolating membranes with

microtoppings with high polymer content. But they are not a cure-all.

Decks and parking structures, also, have movement issues. In addition, you have to figure in slip coefficient and abrasion requirements. That may narrow your choices to coarser grade microtoppings or stencil-grade toppings.

How about traffic?

Most overlays can handle foot traffic. Vehicular traffic? Stencil- and stamp-grade are generally fine for vehicular traffic, Thome says, but not for forklift traffic. If that is a consideration, he says,

This floor was overlayed with Ardex SD-T, with topical dyes and architectural saw cuts.

you have to look at impact and point load. High compression strength does not necessarily mean an overlay can hold up to the crushing power of high density wheels.

Again, in this situation, you might turn to microtoppings. "Since microtoppings are very thin, you're transferring the load through them, instead of having them absorb into the microtopping," says Thome.

Of course, in any overlay situation, the cardinal rule of proper substrate preparation always applies.

As Mack observes, "There is no foolproof way to stop cracking, you can only minimize it. Remember, if there is a crack in the substrate, it will telegraph through the topping. That is why

structural saw cuts are sometimes installed. The crack will have a tendency to crack within the saw cut and not be unsightly."

Indoors or outdoors?

If you are familiar with overlay products, you should be aware that there are products that are designed to be installed indoors, outdoors or both.

In outdoor applications, rain, salt, dirt and other factors can all have an adverse effect on the topping if it is not protected. Crack repair and joint sealing are important to prevent water intrusion. "In





a crack, moisture can get in and under the overlay," Thome says. "Then, when traffic goes over it, you get a pumping action." Ponding and excess water also can be problematic.

Fortunately, product manufacturers have technical installation guidelines on what products can be used outdoors and how to install them. Doing a little homework up front can prevent a lot of grief in the long run.

"There are protective sealers that increase or decrease various aspects of weather resistance, ranging from resistance to water, deicing salts, UV ray, freeze/thaw, acid rain and other factors," Freestone says, "but the composition of the overlays themselves must be carefully looked at before applying just any old product."

And technology is changing every day, so don't be surprised if former "rules" might be broken in time. "For years most self-leveling overlays absolutely could not be used outside for fear of reemulsifying," Freestone says. "But there are manufacturers now that are making great improvements on the level of hydrophobicity among self-leveling cements."

The mix design

If strength is important, one might tend to believe that the thicker the overlay, the stronger it is. Freestone is quick to point out that that just isn't the case with overlays. The ultimate key to the strength of an overlay, he says, is in the mix design.

"Believe it or not, the aggregate size, shape, composition, volume and mix design is as equally as important as polymer-modifier content and This repair job was done by Elite Crete at the Palace of Auburn Hills, home of the **Detroit** Pistons.The application is a 1/4" stamped overlay done with Texture-Pave. It was colored with **Ultra-Stone** stain and sealed with **CSS Emulsion** sealer.

composition. Most manufacturers are primarily concerned with either modifier-to-cement or modifier-to-water content. These ratios are important. However, most manufacturers will build in a safety percentage to make the overlay more 'idiot-proof."

With mix design, he says, the composition and performance pitfalls of the modifier being used are critical; as is considering what the primary application the overlay system is going to be used to create, so you can better determine abrasion resistance, adhesion, exposure to the elements and tensile strength.

Then there is the aggregate. "It still depends on the specific application, but an ideal mix is one that has a larger aggregate content for abrasion resistance, medium aggregates to consistently fill the void between the large aggregate, and smaller aggregates to fill the void between the medium aggregates. Consistency in aggregate shape is critical and, therefore, angular or inconsistent aggregate shape simply won't work well."

Staining and sealing overlays

Not all overlays handle stains the same way. For example, most decorative concrete toppings and overlays can take a chemical stain, but high-resinbased materials don't stain as well as those with high cement content. And acrylic stains can be used, too, but compatibility to the sealer you will use should be considered.

Compatibility between overlay and stain is essential. "That is why samples are almost always required by an architect or designer to determine how the look is going to turn out," Mack says. "Some [overlay] manufacturers have done their own testing and provide their own stains."

In choosing a sealer, Tizard advises that contractors make their choice based on multiple variables: compatibility, durability, costeffectiveness, interior/exterior compatibility,

breathability, chemical resistance, abrasion resistance, maintenance requirements, recoatability and sheen. You weigh your attributes and make a decision.

But Thome points out that in some areas your sealer options may be limited by law. "What's key is, can you use solvent-based? That can eliminate half your sealers if you can't."

This driveway was base-coated and then splatter-textured with Elite Crete's Thin-Finish.



Overlay highlights

As you look at some of the more commonly used overlay products, you can get a better sense of what might work best for your project. Lee Tizard, vice president of Floric Polytech Inc., offers this snapshot look at some overlay options:

- Self-leveling products provide monolithic, very consistent color.
- Stampable overlays have their roots in patch and repair products. Formula modifications make them easy to use and versatile.
- Microtoppings come in different formulations. Low cement/high polymer products are softer and more flexible. Low polymer/high cement products are more brittle, but have higher compressive strength. And there are combinations, such as applying a coarse microtopping for build and then a fine microtopping on top for a refined smooth finish.
- Splatter/knock-down texture finishes could be considered to fall into the category of coarse microtoppings.
- Cementitious mortar finishes are another option for some projects. But they are very labor intensive, especially for large areas.
- Epoxy mortar toppings are primarily an industrial flooring application. They have more resilience than a self-leveling product, with high compressive strength and more impact resistance, plus they have the aesthetics of polished concrete.
- Beyond these overlays, you get into cementitious and epoxy terrazzos, which can be costly.

Repair and cost considerations

Some overlays are easier to repair than others.

Self-leveling products are the most difficult to repair, primarily because it is so hard to blend a repair in to the monolithic surface. Stampable and stencil-grade overlays can be patched back to a joint. And microtoppings and splatter/knock down overlays can be patched relatively easily.

It's the color matching that's the real challenge. Thome explains, "Repairing an overlay is really the work of an artist, especially if there were topical color treatments."

As for the material cost for overlays, Freestone says he tends to view the material costs as immaterial. "I guess that is easy since we are the manufacturer, but really, the cost for any of our overlays runs in the range of 25 cents a square foot for broom-finish applications, 35 cents for microfinish applications, 40 cents for splatter textures and knockdowns, 42 cents for skip trowel slate finishes, and \$1.25 for elaborate thin stamped overlays. When you consider that these applications are being sold by the installer for \$4 for basic finishes and upwards of \$9 for the more detailed applications, you can see what I mean when I say the cost isn't material."



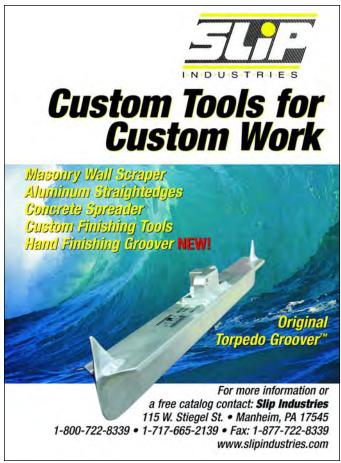


This interior overlay used Elite Crete's Thin-Finish as a base coat with a single-colored coat of Micro-Finish. Then it was colored with Chem-Stone and Ultra-Stone stains to get the wild marbling.

But some overlays, such as epoxy-based overlays, can have much higher material costs. On a basic scale, including material and installation, "Terrazzo is the most expensive overlay, followed by epoxy mortar," Tizard says. "Self-levelers, one-quarterinch mortar trowel-downs and stampable overlays are in the same ball park (in the middle). The least expensive are microtoppings."

On the other hand, Mack says there may be more to consider in the higher-material-cost versus installation-cost equation. "Self-leveling products are more expensive because of how they are designed to work (ease of installation, fast track). Trowelable products are less expensive, but the cost of installation could be a factor since it may take more labor to trowel down a microtopping over a large area."

So, which overlay product will you choose for your next job? Much of the information you need to make the decision is available from the manufacturers of the overlay products on your "options" list. If you understand each product's limitations, you should easily understand which ones will be compatible with the specs of your project.







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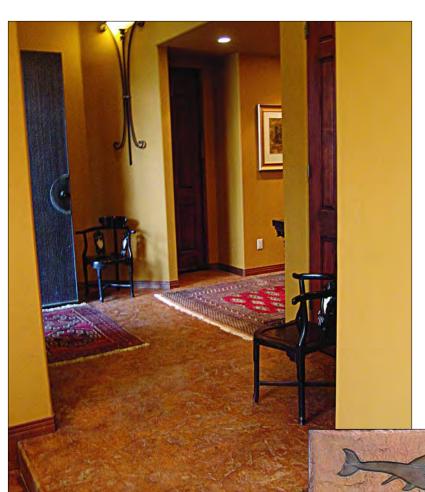
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Profile: Proline Concrete Tools Oceanside, California



by Christina Camara

Paul Sowa (left) and Jeff Irwin co-own Proline Concrete Tools.



very decorative concrete contractor seems to be stamping concrete these days, and there's always a demand for new designs in light, easy-to-use materials that leave the best imprint with the fewest problems.

Experienced contractors have been sharing their likes and dislikes with Proline Concrete Tools for 14 years. Listening to their complaints and suggestions, combined with endless experimentation, has resulted in a line of products that co-owner Jeff Irwin believes is second-to-none in both appearance and performance.

While concrete stamps are popular now, 18 years ago only a few manufacturers made them, and contractors were looking for improvements. At that time, Irwin was working in plastics and had never seen a concrete stamp. His childhood friend, Paul Sowa, worked in the concrete industry and suggested combining their skills and experience to come up with new stamps that could solve contractors' problems.

"We started doing it on the side, and one thing led to another and it become a business," Irwin says. After a few years of trial and error, they started Proline in Oceanside, Calif., in 1991. "We were talking to contractors about what worked and didn't work, and we were able to make products that worked better than what was out there."

The partners learned that contractors didn't like the stamps to be too soft or too hard. They wanted stamps that could be placed on the concrete evenly, creating a clear imprint without moving around too much.

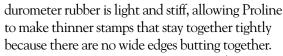
Irwin says Proline uses the highest quality urethane around. "The materials we use are specifically designed for us," Irwin says. The high-











"Our stamps give you a more even and consistent texture rather than a lot of high and low spots that you have to embed really deep," Irwin says. "Our stamps are designed not to do that, but they still give you a lot of texture and relief."

Proline's most successful products are its seamless texturing skins, which gained popularity after they were used in several Las Vegas casinos in the early 1990s. Proline perfected the "seamless stamping" by adding the "feathering edges" into the seamless skins. This feathering creates a smooth transition from stamp to stamp. The skins are also equipped with handles, which even have a warranty not to rip.

Contractors liked how easy they were to use and how quickly they could produce attractive floors — jobs could be finished almost as fast as flat broom-finish concrete projects.

The company's first stamps were ashlar and random stone patterns. Another early stamp was Roman slate, so named because it was used in a redesign of the Caesars Palace Pool Project. Now, Proline's stamps come in a wide variety of patterns and designs, with over 150 patterns and styles. The stamps include brick, wood plank, random stone, cobblestone, tile and flagstone, with variations of each. Irwin says Proline's textures are all created from actual stones laid out in different patterns, giving their stamps a natural look on the finished concrete. "None look as good as ours," he says.

Irwin and Sowa are still talking to contractors, and they find that the biggest problem is not with the Proline tools they are























using, but inexperience in facing different situations and failing to plan ahead. Sometimes the concrete is too wet, leaving suction marks when the stamps are pulled; if it's too dry, it's hard to get a consistent-looking imprint. Failing to lay out the stamps before the concrete arrives can also be a mistake if the contractors aren't sure how the stamps are going to interlock ahead of time. Irwin and Sowa talk contractors through the issues that arise so the projects don't get away from them.

Proline's stamps are used primarily in driveways, pool decks, walkways and entries, and new border tools, designs and improvements are a constant quest. Their tamper, for example, was recently upgraded, and Proline is working on obtaining a patent for its design. The tamper's shock-absorbing handle

removes vibrations and creates a flat imprint even if the contractor hits the tamper off-

Proline recently introduced a new line of flexible stamps that imprint grapevines, dolphins, ivy leaves and a "Spanish flair" design.

Contractors lay feathered-edge seamless texture mats on top of the new stamps, embedding both textures at the same time. The stamps will curve around any contour and can be used for borders or in many other applications.

The company is growing at a fast pace, but the goal remains the same: creating stamping tools that increase productivity and produce beautiful patterns. "Decorative concrete has grown exponentially, and we didn't have a choice but to grow," Irwin says. "We have big ideas and we see a bright future."





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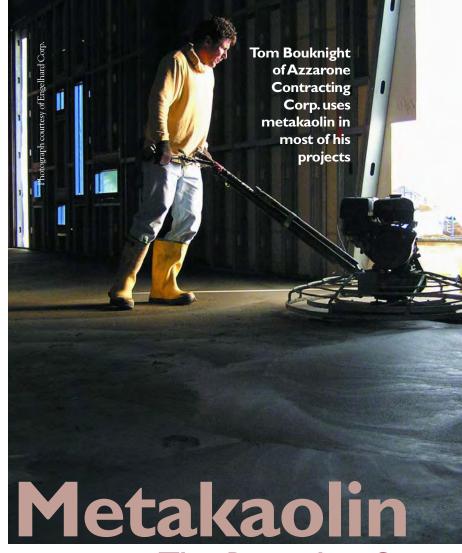
ou may never have heard of metakaolin, but chances are it's coming your way.
This admixture — now being used in everything from fashionable floors to custom countertops — makes concrete stronger, brighter and more workable while decreasing the amount of portland cement needed in the mix.

Metakaolin is a type of pozzolan, materials that enhance the strength, density and durability of concrete. While decorative concrete contractors are at the vanguard of many concrete innovations, some have been slow to discover these materials. This is changing, however, since high reactivity metakaolin, a relatively new type of pozzolan, offers features unavailable from other highly reactive pozzolans — improved concrete appearance and workability.

Over half of the portland cement concrete used in the United States now contains pozzolans, according to the National Ready Mix Concrete Association. Fly ash and silica fume, the most common pozzolans, are problematic in decorative concrete: They are typically dark in color and, because they are industrial byproducts, are not uniform in color. Silica fume is a highly reactive pozzolan capable of producing very strong and durable concrete, but results in "sticky" mixtures that are difficult to place and finish and require special curing techniques.

High-reactivity metakaolin (HRM), on the other hand, is a white powder that brightens concrete. It is manufactured especially for use in concrete and to assure consistent appearance. It is highly reactive and meets or exceeds the performance of silica fume. But unlike silica fume, it creates a creamy cement paste that is easier to pump, trowels "like butter," and can be cured with ordinary curing techniques.

Metakaolin is produced from kaolinite, a mineral found in kaolin clay (also known as china clay). The material is purified to remove compounds that could discolor concrete, and then calcined under controlled heat to create an amorphous aluminosilicate that is reactive in concrete. Generally used to replace 5 percent to 20 percent of the portland cement in a mixture, metakaolin also reduces emission of greenhouse gases associated with portland cement manufacturing. A growing number of concrete producers have metakaolin on hand, and it is carried by distributors selling plastering materials to swimming pool contractors.



The Pozzolan for Decorative Concrete

by Michael Chusid



Fly Ash Silica Fume HighReactivity Metakaolin None Cement: White White + Gray Gray + Pigment Pigment

Metakaolin can be used in white portland cement concrete without compromising its brilliance. Mixed into ordinary gray portland cement, it gives the concrete a lighter value that can create new aesthetic opportunities. It can also be used in integrally colored concrete to lighten and intensify color, and its whiteness and uniformity make it easier to match colors.

Concrete appearance

In addition to brighter and more consistent color, metakaolin improves concrete appearance in several important ways:

- The improved workability of metakaolinenriched concrete enables contractors to achieve smoother, denser finishes without over troweling. This results in less trowel burn, reduced mottling, and fewer surface blemishes.
- Metakaolin makes concrete denser so it is less likely to absorb stains that could disfigure a surface.
- As a highly reactive pozzolan, metakaolin consumes lime that might otherwise cause efflorescence. And it resists moisture penetration that can dissolve and transport lime and other soluble minerals to the surface of concrete.
- Alkali silica reaction (ASR) is a chemical reaction between the alkaline lime in concrete and the silica in some types of aggregate. If not mitigated, ASR can crack concrete. Metakaolin is one of the most effective admixtures for preventing ASR and allows crushed recycled glass to be used in decorative concrete.
- Improved durability: Nothing ruins the appearance of decorative concrete more than cracking, corrosion, spalling, or other forms of concrete deterioration. By boosting concrete

strength and density, metakaolin provides a safety factor to help keep your work looking its best.

Metakaolin-enhanced concrete

One concrete contractor who has embraced metakaolin is Alan Bouknight, president of Azzarone Contracting Corp. in Mineola, N.Y. He says, "I made samples with metakaolin and put them out in the yard to watch how they fared. After more than three years of exposure to the elements, they show none of the pitting and deterioration we get with typical concrete in our harsh urban environment."

Since then, Bouknight has used metakaolin in exposed concrete floors for a fashionable Armani Casa showroom, to create a sculptural concrete stairway for the Museum of Modern Art, and for pool decks for a custom beachfront residence.

"Metakaolin gives the concrete more 'butter' and enables me to coax out the inherent beauty of concrete in subtle ways," he says. "It makes concrete more consistent so we can create an ultra smooth surface without flow lines or objectionable blemishes." Used with white portland cement, metakaolin "can produce beautiful opalescent finishes. Plus, the bright white metakaolin helps intensify the color we are after."

Tom Ralston, president of Tom Ralston Concrete in Santa Cruz, Calif., is experimenting with metakaolin for concrete countertops, using dosages of up to 10 percent or 15 percent of the cement weight. "Metakaolin will prove to be a very important additive as we continue to improve our countertops," he says. "It fills in voids and supports the sand particles to ease finishing. Instead of taking three or four swipes with a trowel, you might need only one or two to get a smooth hard finish."



Andrew Goss

crafts jewelry,

bracelet, with

metakaolin-

enriched

such as this



A Primer on Pozzolans

Portland cement consists primarily of calcium silicates. When mixed with water, a chemical reaction known as hydration creates calcium silicate hydrate (CSH). Needle-like crystals of CSH interlock to hold concrete together, almost like a glue.

Hydration also produces calcium hydroxide, also known as lime. In fact, approximately 15 percent to 25 percent of hydrated portland cement is lime. Lime does not contribute to the strength of concrete and can even be detrimental to a project. For example:

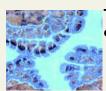
- Lime migrates out of concrete to form efflorescence on the concrete surface.
- When lime leaches out of concrete, it creates voids that increase the porosity of concrete, allowing moisture penetration and corrosion.
- Lime is highly alkaline and contributes to alkali silica reaction (ASR) that can crack concrete.

Pozzolans are supplementary cementitious admixtures that react with lime to form more CSH. The additional CSH increases the cementitious bonds in the concrete to make it stronger. This also makes concrete denser and less porous so concrete is more resistant to penetration by water and chemicals. And because pozzolans consume lime, there is less efflorescence and ASR.

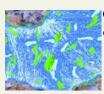
Highly reactive pozzolans like metakaolin outperform other pozzolans and can produce high-performance mixtures with higher strength and lower porosity than could otherwise be achieved.



In this simulated microscopic view of cement paste, hydration begins when portland cement particles are surrounded by water.



The portland cement begins to dissolve in the water, forming a gel.



Crystals begin to form as a result of chemical reactions.



Calcium silicate hydrate (CSH) shown here in white, creates interlocking crystals that give concrete its strength. However, as much as 25 percent of the products

of hydration become calcium hydroxide (lime), shown in green, and does not contribute to the strength of concrete. Voids are formed by excess water in a mixture.



The voids create pores that allow water to penetrate concrete. Since lime is soluble, it dissolves to create even larger pores and allow more liquid and gases to penetrate into the

concrete where they can accelerate corrosion. The lime can also be deposited on the concrete surface where it forms efflorescence and disfigures concrete.



Inside the concrete, the highly alkaline lime can react with certain types of aggregate to form alkali silica reaction (ASR). ASR expands in the presence of water, creating

forces that can crack concrete.



As an alternative to ordinary concrete mixtures, high reactivity metakaolin can be used to replace 5 percent to 20 percent of the portland cement in a mixture. The

small size of the metakaolin particles fills in the gaps between cement particles to create a denser and creamier cement paste.



As a pozzolan, metakaolin reacts with lime formed during cement hydration to form additional CSH. Because there is less lime, the potential for efflorescence and ASR

are reduced.



The additional CSH formed by metakaolin results in a denser concrete that is stronger and has greater durability due to lower porosity. Plus, the white color of

metakaolin brightens the concrete.

A unique animation explaining how pozzolans improve concrete is available at www.engelhard.com/metamax as part of an online continuing education program.

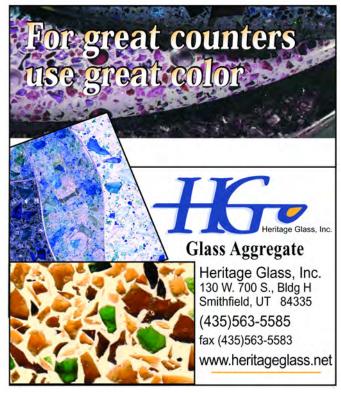
Images © Engelhard Corporation.

Metakaolin is an affordable alternative to using white portland cement to lighten the color of concrete, Ralston says. "The colors you can produce with metakaolin are in a range you don't ordinarily see; we use it if customers want concrete that is just a little more pastel." He suggests that the higher early strength due to metakaolin could reduce the waiting period before concrete is hard enough to polish, and that the denser concrete may make countertops more stain resistant.

Metakaolin is also finding its way into the fine arts. For example, Andrew Goss, the author of Concrete Handbook for Artists, uses metakaolin in concrete sculpture and jewelry. He says, "Metakaolin can double the compressive strength of the concrete, lowers permeability and increases density but also has advantages over silica fume. Metakaolin makes the mix creamier, less sticky, and is plain white in color."

Guidelines for use

Concrete with metakaolin can be placed, finished and cured in pretty much the same manner as concrete without HRM. It complies with ASTM C 618 — Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete, Class N and is accepted under ACI 318 — Building Code Requirements for Structural Concrete and Commentary.



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CIRCLE #62 ON READER SERVICE CARD



According to Anthony Reed, market development manager for Engelhard Corp.'s MetaMax high-reactivity metakaolin, "At an HRM replacement level of 8 percent to 10 percent, concrete is generally more cohesive and less likely to bleed. As a result, the effort required for pumping and finishing processes is reduced. Compressive strength and density of hardened concrete are also increased. Optimum pozzolanic benefits of metakaolin can be obtained by replacing 10 percent to 20 percent of the portland cement in the mixture with HRM. These levels produce concrete with lower porosity and improved durability and resistance to impact and abrasion."

Reed also points out that metakaolin reduces concrete slump and generally requires the addition of a high-range water reducer (HRWR). "Metakaolin should generally be added to batch after portland cement and before HRWR is added," he says. "Air entraining admixtures may require somewhat increased dosage when used with metakaolin."

When using integrally colored concrete, metakaolin brightens the shade of colored concrete by creating a lighter cementitious base color, according to Nick Paris, marketing manager for Davis Colors.

While metakaolin should have no impact on surfaceapplied coatings, special consideration must be given when using penetrating stains, Paris explains. "Because metakaolin increases the density of concrete, it may reduce the ability of stain to penetrate the surface. In addition, pozzolans



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CIRCLE #88 ON READER SERVICE CARD

Photographs courtesy of Engelhard Corp.



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consume some of the lime in concrete and can reduce the ability of chemically active stains to react with lime and develop their color."

David Kucera, president of David Kucera Inc., Gardiner, N.Y., a fabricator of precast concrete ornamentation and architectural cladding, points out a further tip on finishing concrete with metakaolin. "Metakaolin makes my concrete more resistant to acid rain, but it also makes it more difficult to use an acid wash to expose the aggregate. I now have to work twice as hard to remove the cement paste." He admits that this is an ironic testimony to the effectiveness of metakaolin in improving the density of concrete. On the other hand, he says, metakaolin simplifies sandblasting. "The harder concrete makes it easier to keep an edge on a piece, and corners don't get rounded off as easily."

Contractors who have used metakaolin advise that before doing a project with the additive, decorative concrete craftsmen should prepare trial batches using proposed materials in order to refine their mix and technique. "Once they get used to working with it," Bouknight says, "the guys on my crew love metakaolin, especially how it finishes. It makes them prouder of the work they do."

Michael Chusid, FCSI, is an architect and serves on the ACI Committee 124 — Concrete Aesthetics. He is a technical and marketing consultant to building product manufacturers and can be reached at www.chusid.com.



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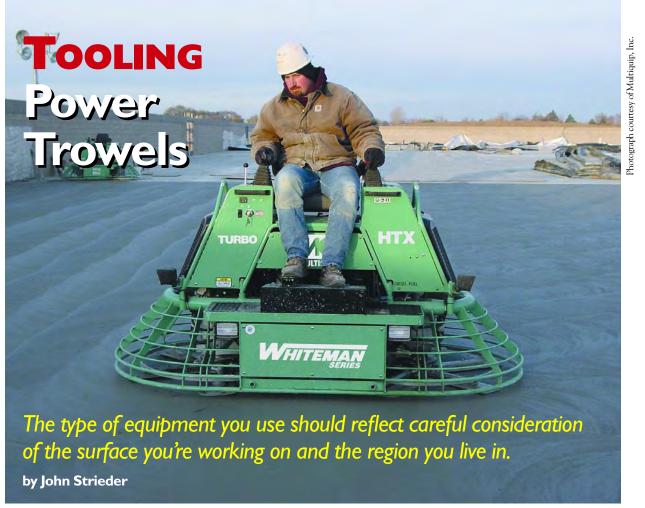


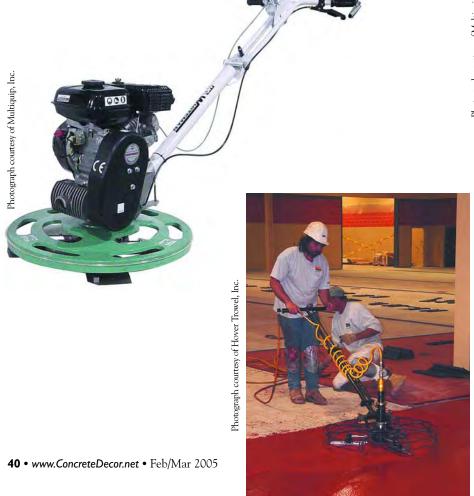
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icking the right power trowel for the job is something a decorative contractor needs to consider carefully.

A power trowel will save time and sweat, but the machine is not known for its delicacy. Between its weight and the heat of its steel blades, the wrong choice can wreak havoc on a decorative concrete floor. So do your homework.

Ride-on vs. walk-behind

Power trowels can be divided into two categories: walk-behind and ride-on.

The first consideration in picking one or the other will be the size of the job. A ride-on power trowel's greatest strength is its productivity — it contains more blades and pans on its underside. Its greatest liability is its size. It is simply too big and heavy to maneuver into a residential basement and along the edges of walls. It also costs much more than a walk-behind.

Power Trowel Manufacturers

HoverTrowel Inc.: www.hovertrowel.com

Stone Construction Equipment Inc.: www.stone-equip.com Wagman Metal Products Inc.: www.wagmanmetal.com White Cap Construction Supply: www.whitecapdirect.com

Multiquip Inc.: www.multiquip.com

The high productivity of the ride-on helps with the fast-curing concrete used in commercial applications. But the heavy machine would obliterate a thin overlay system.

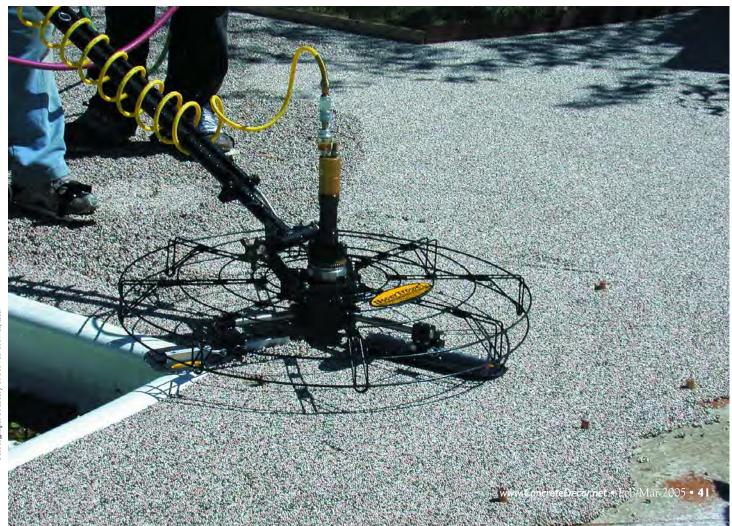
So a decorative contractor, who is typically working a relatively small residential job, will probably be using a walk-behind power trowel. "I don't think I've ever seen a ride-on on something smaller than 2,500 square feet," says Ed Varel, engineering project manager with Stone Construction Equipment Inc. "And ride-ons are such large-ticket items that the only way they pay for themselves is to use them quite a bit."

A walk-behind power trowel handles like a waxer, Varel says. "The trowel is

constantly trying to push you over. They are tough to operate. You have to find somebody willing to build up the calluses and muscles to operate that guy."

Not all walk-behinds are created equal, of course. Weight is an issue here too. In some climates, even a walk-behind may be heavy enough to sink into green concrete. "In the cold North, you want it light, or otherwise it will dig into the finish," Varel says. "Northerners want as little weight as possible, because things don't set up real quickly. Down in Florida, they can't get enough weight. They want the biggest."

There are specialized power trowels that are designed for use on



Photograph courtesy of Hover Trowel, Inc.

polymer-modified systems. For example, the HoverTrowel is lighter than a conventional walk-behind, which allows it to be operated on a thin-coat system that won't take a heavier machine. "The HoverTrowel is really the only lightweight trowel on the market that can handle overlayments," says HoverTrowel Inc. president Drew Fagley.

The HoverTrowel is pneumatic, which makes it a good choice in jobs where a gas-powered machine can't be used. If a contractor wants to switch to a gas-powered engine, the HoverTrowel can be retrofitted with one.

"It's a power trowel that also does things that a man can do," Fagley says. "It's sort of a hand trowel standing up."

Varel's company, Stone Construction Equipment, makes power trowels with unique features of their own. An RPM adjuster and hand-disconnect clutch allow the engine to rev up to speed before the blades are engaged. When the operator isn't actively troweling, he or she simply disengages the blades. The engine continues to hum at the same RPM, ready to resume work at a second's notice.

A safety switch on Stone's machine disengages the blades automatically if the machine spins one full turn, safeguarding against the power trowel running amuck, injuring workers and ruining the pad.

Then there is the remote-control power trowel. White Cap Construction Supply exhibited a Tibroc CCF-40 radio-controlled power trowel at the 2005 World of Concrete conference. The 85-pound machine, which the company bills as the first of its kind, is controlled with two joysticks.

Remote-control power trowels aren't in wide use right now, but they might catch on. They would reduce operator fatigue without being as big or expensive as a ride-on, Varel says. "They would be a little bit of both worlds, is what I'm thinking."

Fagley also likes the idea. "I personally think down the road there is going to be a lot of remote troweling done," he says.

Choosing a blade

After picking a machine, a contractor must decide what will go underneath it.

The blade "spider" of a power trowel extends from the center like the blades of a lawnmower. There are three categories of blades: float, finishing and combination.

The float blade is used first, spinning flat at a relatively low RPM rate. As it works over the surface, high spots are leveled, water rises to the top and larger rocks sink.

Then comes the finishing blade, applied with a higher RPM and at a slight angle. The heavier pressure seals the concrete and increases its density.

Combination blades can be used to both float and polish, as long as they are reset at the necessary angle between tasks.



Instead of float blades, an operator may attach paddle-shaped float pans to the spider. The attachments are often used to smooth epoxy coatings over concrete floors. They will also leave a flatter surface than float blades, given the same number of passes. But because pans don't close up a surface as effectively as blades, they are not used for finishing.

Each type of blade is progressively narrower, with floats being the widest and finish blades the skinniest. Smaller, stiffer finish blades will produce a harder swiping action and better densify molecules in the concrete, says Jeff Snyder, sales manager with Wagman Metal Products Inc. "The hardest surface is going to be achieved by a finish-style blade."

Wagman Metal Products makes several series of plastic trowel blades that should last as long as the steel variety. And unlike steel blades, plastic floats won't leave burnish marks, an important consideration when power-troweling color hardener. "You can get a high-polish finish with plastic blades without burnish marks," Snyder says. "You can spin plastic on a surface until the machine runs out of gas and not mark it."

Other specialty attachments will go underneath too. Grinding blocks can be attached to rub out screed marks. Edger blades, with ends that are curved instead of square like traditional blades, can get right up against a wall.

The HoverTrowel takes mahogany or magnesium floats, which would tear apart a conventional trowel. This feature may come in handy when a contractor doesn't want to use steel trowels because of their tendency to close the pores of the surface. Closed pores can lead to spalling in cold parts of the country where the concrete is subject to freeze-thaw cycles. "With mahogany, pores stay open and the concrete can breathe," Fagley says.



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Project Profile Versatile Building Products Inc.

Liquid Granite chip flooring system

by John Strieder

hen a pair of specialists from Versatile Building Products made a January trek from California to Oregon to coat a concrete floor, their first concern was the cold.

The project: a 490-square-foot garage floor at a house near Eugene, Ore.

The coating: Versatile's Liquid Granite chip flooring system.

The goal: Complete the installation in two days at temperatures below 45 degrees.



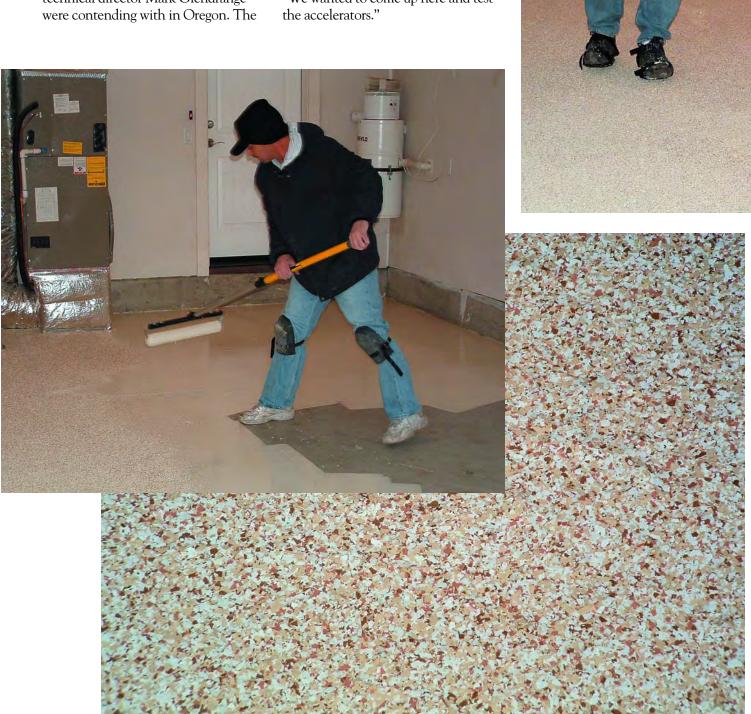


The flooring system comes with the user's choice of epoxies and urethanes. On this floor, the specialists worked with Vapor-Stop primer (a low-vapor epoxy tinted "Cottonwood") and Versathane CRU 400 polyurethane topcoat. The two coatings sandwiched a "Medium Tan" mix of vinyl paint chips.

The system is usually installed in 60-degree to 80-degree weather, about twice as warm as what Versatile sales manager Simon Gonzales and technical director Mark Glendrange were contending with in Oregon. The

minimum recommended temperature for application of these products is typically 50 degrees, not to mention that the humidity was also exceptionally high. These factors together would have delayed the completion of the process by more than seven days.

So they added one accelerator to the epoxy and another to the topcoat. "One of the reasons we did this job is because of the cold," Gonzales says. "We wanted to come up here and test the accelerators."



The epoxy was applied first, then the chips. Versatile recommends the broadcasting of chips to the point of rejection, laying down enough to soak into the epoxy and still leave an attractive surface afterward.

"This is the fun part," Gonzales said as he scattered chips. There is no proper technique to pitch chips, he noted, and nearly every applicator has

a unique approach. "I'm feeding chickens, just like with my granddaddy," he said.

The team emptied a 55-pound and 27.5-pound box of chips, and used a blower to move chips into the remaining bare spots. The crew estimated that once the chips were scraped, swept and blown, about three-fifths of them would be recollected for recycling.

Then, finally, came two coats of the Versathane CRU. With only two coats, the floor was skid-free without the use of aluminum oxide.

The accelerators worked. After the first coat of Versathane started curing, it had "the same integrity as if someone had done it without an accelerator in 70-degree or 80-degree heat," Glendrange said. "The edge of the garage was tacky, but you could walk on it."

The hardest thing about laying epoxy is prep work, Gonzales said. But on this job, prep was relatively easy. The slab was still only six months old, so the relatively few oil and fluid stains required only roughing. The ghosts of the stains were still visible as the Versatile team began to prime and, as they promised, the vinyl chips covered everything.

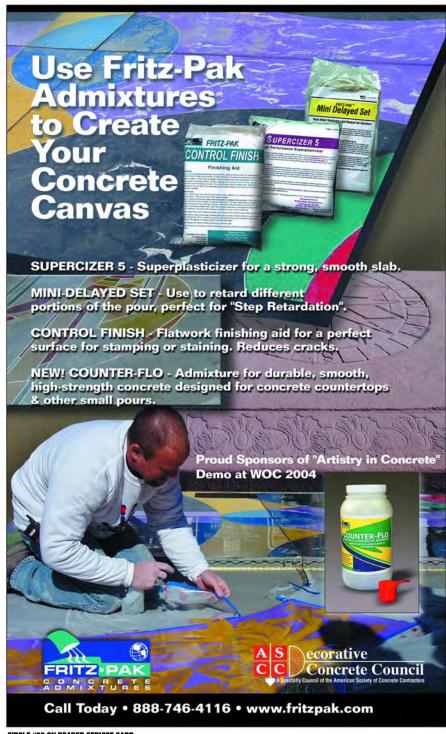
Cracks proved to be a slightly bigger problem, but not by much. Four long control joints, installed with zip strips, showed only as hairline cracks before the process started. They were still slightly visible after the excess chips were swept away, but that was easily remedied. The team simply applied the first coat of Versathane, then scattered more chips on top of the cracks. Then, once again, they removed the loose chips. They spread the second coat of Versathane over the works.

Gonzales said putting down a chip flooring system is one of his favorite applications at Versatile. "You can hide multiple sins with this," he said. "This covers everything."

If needed, a contractor or homeowner can go back in a year's time and put chips and sealer on trouble spots, and the end result will look identical to the first go-round.

Overall, the project went off without a hitch, Gonzales said.





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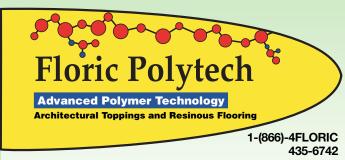
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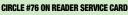
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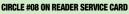
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POLISHED PERSPECTIVES

by Peter Wagner

his is the first of several columns that I will have the opportunity to write for Concrete Decor during this year. "Polished Perspectives" will focus on providing simple, sound information on how to deliver a polished concrete floor to your customer — one that both you and your customer will be proud of. To me there is no better place to start than with the basics: your ability to use your diamonds to establish proper scratch patterns. All of the bells and whistles in your bag of tricks will rarely save you if you haven't first performed your grinding and polishing correctly.

Scratch patterns and diamond selection

There is nothing more defeating when polishing concrete than to complete all of your polishing steps and then find scratches that you did not remove at the low end of your grinds.

When this occurs, I like to say that you are "paying tuition." I don't mind paying tuition once, but I hate paying tuition twice for the same thing. Providing proper scratch patterns requires that you have an understanding of the floor you will be polishing, the expectations of your customer, and the diamonds and equipment that you will use to perform the work.

Prior to mobilizing for the actual project, it is smart business to perform a test patch, preferably with the equipment that you will actually use on the floor. Whether you are grinding and polishing wet or dry, you still have to deal with proper scratch patterns.

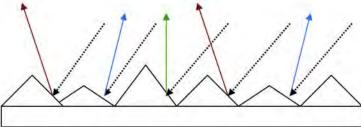
Each project is different; for that matter, even individual slabs within a project may be different. Ideally you want to know whether the floor is new or old; soft or hard; flat or wavy; sealed or not, before you even set foot on the site. Why is this important? All of these variables will influence which equipment and diamonds you will need to successfully perform the work, or even help you decide if the floor is a good candidate to

be polished because not all floors are. Some basic rules of thumb:

- Be wary of weather-damaged or carbonated floors, and discuss the possible ramifications with the owner.
- Always confirm that the floor does not have a topical sealer.
- If the floor is hard, you generally use a soft matrix diamond.
- If the floor is soft, you generally use a hard matrix diamond.
- Don't move on until you have successfully removed the previous scratch.
- Have the customer or their representative sign off on your test.
 When starting with a new or

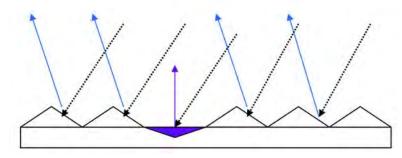
existing slab, your initial evaluation will expose how flat the slab is and what scratches and gouges you will be required to remove. As you can see in Graphic 1, the floor surface is generally not consistent, either in flatness or in being void of scratches. An irregular floor delivers

irregular reflectivity and clarity. The black arrows represent incoming light, while the colored arrows represent reflected, or refracted light. Notice that due to the floor irregularities, the light is refracted in a random pattern, as opposed to being reflected uniformly as it would be from a properly ground and polished floor.

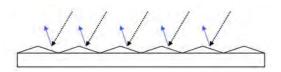


It is necessary to understand the importance of creating a proper scratch pattern. Every pass of each diamond disk will impart a "scratch pattern" to the concrete surface. You must always take the proper amount of time for each pass so that the diamonds grind or polish every square inch consistently.

Once you have removed the objectionable scratches or irregularities in the slab with your lowest grit diamonds, you have performed nearly 90 percent of your work. The purpose of each successive diamond is to remove the scratch pattern of the previous diamond, to the point where you have produced an even scratch pattern, and the scratch pattern is so fine that the human eye will not be able to see it on the floor.



Whenever you leave a deep scratch or a "bird bath" (where the diamonds have not performed correctly), you will get refraction of the light, as opposed to a consistent reflection of the light. This creates a void, or dark area, in the reflection on the floor. Take your time with each grind and continually evaluate your work as you proceed. To fix a missed scratch after having moved on through the subsequent grits requires you to regrind an area far greater than the area of the immediate scratch. Graphic 2 shows how a missed scratch (purple) will change the direction of the light. This area will appear as a blemish or darker spot on



the floor. Graphic 3 shows the reflection from a correct scratch pattern.

Peter Wagner is the marketing director for RetroPlate and is responsible for working with RetroPlate's Certified Applicator network throughout North America. Mr. Wagner brings over 20 years experience in the flooring industry to the job. Prior to taking his position last year, he was a small-business owner involved in both natural stone restoration and concrete polishing in the Pacific Northwest.

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PRODUCT PROFILES

Artevia Decorative Concrete

afarge North America is putting some color in its catalog with its new line of Artevia colored concrete.

Artevia concrete is integrally colored with a palette of earthy tints that can be customized to fill special orders. The palette offers 38 colors in the United States, 18 in Canada. A greater variety of settings in the United States called for more color choices in the U.S. palette, says Greg Sheardown, vice president of Lafarge North America's ready-mixed performance division.

The company supports the new line with a system that trains finishers in the art of decorative concrete. Lafarge markets the line with the promise of unique designs and textures, and the training program helps ensure that property owners see those results. Finishers are taught decorative techniques such as etching, polishing and saw cuts. Artevia concrete customers are then referred to those trained craftspeople.

The 38 U.S. colors are divided into three color groups with increasing levels of pigment. Generally, the more pigment in the mix, the more the color costs. Nine "Subtle" colors are the least expensive, including hues such as "Sandstone" and "Light Gray." The mid-priced "Standard" group of 21 colors includes such shades as "Sangria," "Salmon," "Harvest Gold," "Pewter" and "Mocha." The top-of-the-line "Premium" group consists of eight rich colors, such as "Brick Red," "Flagstone Brown" and "Kahlua." Prices vary within the groups, but to give one example, all reddish "standard" colors cost about the same.

Quality assurance and control are key elements of the Lafarge system, from concrete and pigment to service and installation, Sheardown says. "Any producer can provide you with a brick red. We have a quality-control system in place to make sure what you order is what you get."

Lafarge North America is a leading supplier of cement, ready-mixed concrete and other construction materials to the United States and Canada. Artevia is the company's first formal launch of products with integral color.

"We've sold integrated color before," Sheardown says. "If somebody wanted to have it, we'd do it. But I think we've resisted it

more than we've supported doing it."

The company plans to release more colored decorative concrete products under the Artevia brand name. Next will likely be a line of colored exposed aggregate, which could be on the market by the end of this year, Sheardown says.

For more information about Artevia, visit www.lafargenorthamerica.com/artevia or call (703) 480-3600.





Color Spreader

Ithough Brian Bettencourt has logged 16 years as a concrete contractor, he had not tried his hand at using color hardener until late 2003. He landed his first job while attending a color-hardener training workshop. And almost immediately, he was disgusted. "It was a night more "he says

disgusted. "It was a nightmare," he says.

Dispersing color hardener is a filthy job, he declares. "You're covered from head to toe. It's in your clothes. It's on your clothes. If there's a little bit of wind, it's that much worse."

The cloud of loose powder can't be healthy to breathe, he says. And if a homeowner objects to the leftover dust on plants and walls, a contractor could end up doing a pressure-wash job on the house ... in both senses of the word.

So Bettencourt marched home and, in only a few days, invented a better way to spread color: The Color Spreader.

The tool is a tray of steel mesh with an aluminum frame. It's 18.25 by 18.25 inches, weighs 3.35 pounds and attaches to the end of any standard screw-on or plug-in pole. The holes in the mesh are big enough to let color hardener or release agent pour through when jarred loose, but small enough to keep clumps in the tray. Color hardener is dumped into the Spreader while it's held over a bucket, then

carried to the slab. When the tray is gently shaken back and forth over the concrete, the powder cascades downward in even strokes, laying a path 14 inches wide.

The tool disperses material more evenly than the hand-throwing method. And because even dispersal is more efficient, the job is finished more quickly.

On the first pass, hand-scattering will cover only 30 percent to 40 percent of the slab, Bettencourt says, while one pass with the Spreader will cover 85 percent to 95 percent.

The tool also doesn't leave too much in spots, potentially saving the contractor a lot of powder. "That's just a bonus at the end of the job, to be saving in product," Bettencourt says.

And that powdery fog stays at knee-level and settles immediately, instead of covering everything from shrubbery to employees.

Bettencourt's company, Innovative Tool Design, officially launched The Color Spreader at the 2005 World of Concrete show. "People can really relate to the Color Spreader once they see it in action," he says.

Lee Levig, a Fairfield, Calif., contractor who purchased the tool, praises its speed and ease of use. "If you're throwing color hardener, you have to have this tool," he says. "It gives you a more even spread without giving you lumps and bumps."

Now, Bettencourt is researching customized versions for other materials, looking into a larger model on wheels for commercial jobs, and taking pitches from potential distributors. "It looks like this thing is going to be going pretty crazy," he says.

For more information about the Color Spreader, visit www.thecolorspreader.com or call (209) 522-7334.

Soff-Cut X-150D Prowler Decorative Concrete Saw

Soff-Cut International's X-150 Prowler early-entry concrete saw can be adapted to make decorative V-shaped or radius cuts. Concrete contractors loved that feature. But they found themselves making that adaptation often, and they got frustrated.

The manufacturer took the hint. Last year, it introduced the Prowler X-150D, which does only decorative cuts.

And yes, most of the new saw's buyers already owned an X-150. "They found they needed a second saw," says Soff-Cut marketing manager Brenda Nabarrete. "Changing back and forth was too much hassle."

At 100 pounds, the gas-powered X-150D is relatively lightweight. "It is small," Nabarrete says. "It was designed to be used in residential projects."

Decorative cuts — V-shaped or rounded radius cuts that are ground into existing grooves — are this Prowler's specialty. Another concrete saw is used to make the rough first cut, and the X-150D follows to make it look good.

The saw boasts a low-noise, low-vibration 4.5-horsepower engine that will be appreciated in residential neighborhoods. Its size makes it perfect for driveways, sidewalks, and whenever an operator must work alongside bigger machines.

The blade block drops the blade directly into the existing cut. The integrated block maintains weight balance for a consistent cut, and an enclosure around the block controls noise and dust. Self-aligning guide wheels, which come in three sizes, assure proper alignment with the joint, and depth of cut is preset.

The Prowler X-150D costs about the same as an X-150 and a beveled-blade adapter. Soff-Cut markets seven ProEdge beveled blades for

use with the saw. For more information, visit www.soffcut.com or call (800) 776-3328.



And the Winner is ...

t a wine and cheese gala held during the WOC tradeshow, Concrete Exchange presented awards to the winners of its first concrete countertop design competition.

The Members' Circle of Distinction Challenge received 80 entries, with a total of seven category winners. At the reception, Concrete Exchange members from all over North America enjoyed socializing with Fu-Tung Cheng and other concrete artisans as well as a slideshow presentation showcasing the winning projects.

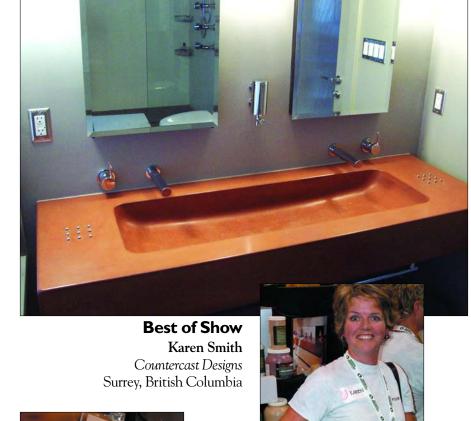
"The amount of people that attended the Design Awards reception really showed a phenomenal interest in concrete countertops," said Luc Lafrance, a Concrete Exchange member. "Concrete Exchange's booth was buzzing with people."

The design contest's submissions were evaluated on exceptional design, technical skill, and overall appeal of the countertop surface.

For more information on the Concrete Exchange, visit www.concreteexchange.com or call Jeff Osteen at (510) 849-3272, ext. 217.

membership 🛍

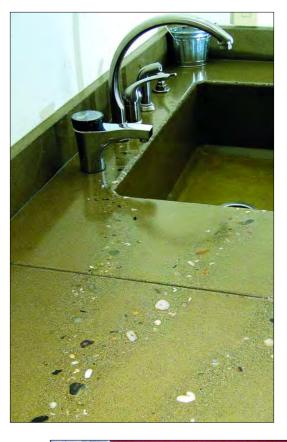
HOME





Best Decorative Finishes

Andrew Simon and Jaimie McGuire Lokahi Stone Honolulu, Hawaii





Best Integral Sink Mike Moncrieff Monart Lynden, Washington

Best Functional Feature Mike Moncrieff Monart Lynden, Washington

Best Kitchen Countertop

Dale Blayone Concrete Cuisine

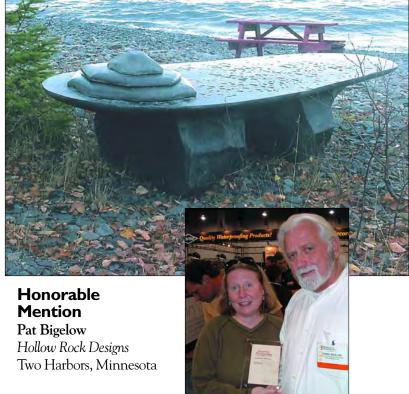


Josh Feigin Seattle, Washington





Best 3-Dimensional Application Steven Pollock Woodstone Design Vancouver, Canada



Concrete at Home

u-Tung Cheng's eagerly awaited second book, Concrete at Home, is now available. A follow-up to the best-selling Concrete Countertops, published in 2002, the new book has an expanded scope that includes concrete floors, walls, mantelpieces, fireplace surrounds, water features and more.

Cheng, as always, combines his respect for antiquity with striking modern designs to create homes that are simple yet elegant. Always at the cutting edge of decorative concrete, he never fails to find new ways to use this age-old material. "My vision," he says, "is a throwback to the era of the guild, the artisan and the craftsman — integrated with the tools of the 21st century."

Featuring 350 color photographs, Concrete at Home begins with basic information about concrete, including an overview of pouring a slab, what makes a good mix, etc. Subsequent sections are devoted to floors, countertops, walls, fireplace surrounds and other features. Writing in an engaging, almost conversational style, Cheng takes readers behind the scenes on 22 projects, offering both practical information and inspiration.

While Concrete at Home contains a lot of basic information that seems to be aimed at readers with relatively little knowledge of concrete, it also offers plenty of detailed advice and great illustrations. Also of interest to our readers will be invaluable tips Cheng has discovered, such as how to fix stains on concrete countertops and even a suggestion to avoid putting a concrete sink in the kitchen.

Concrete at Home will inspire you, and you might want to show it to your customers to inspire them as well.

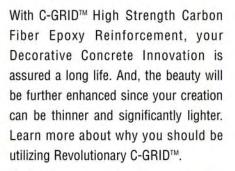
The book is available at www.concreteexchange.com, or by calling (510) 849-3272, ext. 217.



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Product News

Terrazzo application helps workers do a stand-up job

MAPEI has introduced the Terratop system, a flowable terrazzo binder that can be poured or pumped over a special primer that is applied to a substrate. Aggregate is broadcast in decorative patterns over the surface to fulfill the architect's design.

MAPEI's technology lets installers work from a standing position instead of troweling terrazzo onto a floor while on their knees. Terratop dries quickly and its flowability allows a lot of square footage to be covered in a day. What's more, Terratop is a water-based, LEEDS-compliant, low-VOC system.

Pro Terrazzo Inc. will distribute and support the system in the northeastern United States. In addition, it will supply the necessary aggregates, sealers and accessories. The International Masonry Institute, the training arm of the Bricklayers and Allied Craftworkers Union, will train and certify terrazzo installers in the new process. Terratop will only be installed by IMIcertified craftspeople.

For more information from MAPEI, visit www.mapei.com or call (800) 426-2734.

DuoScreed feasts on tough concrete work

Multiquip's one-man DuoScreed features a unique blade profile that enables a lone operator to strike off concrete floors. This model uses blades that are 50 percent lighter than those on its predecessor, allowing greater maneuverability, faster finishes and stronger slabs with less effort.

It is well suited to a variety of jobs such as sidewalks, driveways, pathways and decks.

The DuoScreed's vibratory action embeds aggregate and reduces air voids, producing a dense slab while eliminating the strenuous, time-consuming labor associated with manual screeding. It sports an

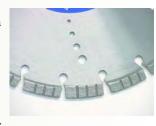


integrated lifting bar that is part of the control handle. The blade reverses in seconds without tools, with one side used for standard form-to-form screeding while the other is utilized for wet screeding. The unit is powered by a fourstroke, 1.5-horsepower Honda GX-

31 gasoline engine. For more information, visit www.multiquip.com or call (800) 421-1244.

New diamond blades offer many improvements

Multiquip Inc. has improved two series of diamond blades — the HSC combination blades and Side Winder wafer-style tuck points — that work with a variety of concrete and masonry cutting applications. The upgraded HSC combination blades boast increased core thickness, additional cooling holes and a new gullet configuration. These improvements increase the blade's lifespan and make it less susceptible to damage from operator error.



The HSC allows contractors to use one blade on jobs that previously required multiple blades. Available in diameters of 12 inches to 20 inches, the diamond blades cut concrete, asphalt, brick, block, pavers, soft stone, and roof tile. They can be used on high-speed cut-off saws, low-horsepower walk-behind saws and stationary masonry saws.

The new Side Winder wafer-style tuck point series also improves on the originals. The blades eliminate segment loss from undercutting, boast superior grinding speeds and let users easily grind away damaged mortar.



Side Winders are offered in two-blade and three-blade designs with ¼-inch and ¾-inch thicknesses, respectively. There are four grades of conventional tuck point blades in various bond harnesses and two grades of wafer-style tuck point blades.

For more information, visit www.multiquip.com or call (800) 421-1244.

Fresh offerings from Marshalltown

Marshalltown Co. has added two new epoxy floats to its premier Marshalltown brand, both featuring the durable and ergonomic DuraSoft handle. The floats offer beveled edges



and rounded front corners, as well as harder and stiffer pads for handling demanding applications. The plastic backing plate is recessed to prevent scraping. The floats come in 10-inch by 4-inch and 12-inch by 3-inch models, and the larger float has an offset handle and narrow plate for working in tight places.

Marshalltown has also introduced a new line of functional, tough Marshalltown nylon tool bags. The blue and black bags offer a variety of pocket configu-

rations and come in three sizes and styles.



The company has redesigned its Mud Masher for improved leverage and efficiency. The new masher



features a sturdy 23-inch hardwood handle with a "D" grip design.

Finally, Marshalltown has released four new aluminum handle sections designed to be versatile extensions for many tools, including bull floats and fresnos. The sections come in lengths of 48 inches, 96 inches, 120 inches and



144 inches, and complement previously existing 60-inch and 72-

inch models. All are 1¾ inches in diameter and interlock with other poles.

For more information, visit www.marshalltown.com or call (800) 987-6935.

Elcometer introduces new covermeters

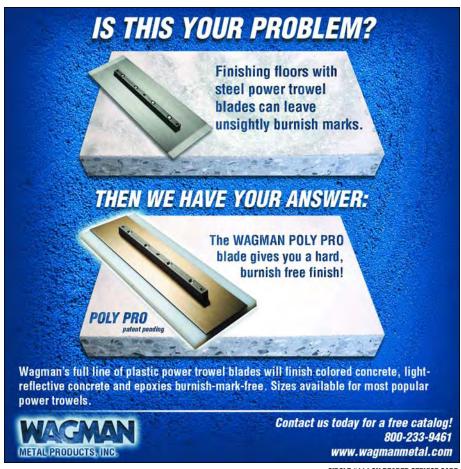
Protovale by Elcometer introduced the Protovale 331, a new series of covermeters. This model range has been designed to meet all of a contractor's needs when measuring rebar for on-site concrete inspection, from rebar location to comprehensive site surveying.

Available in three models, the Protovale 331 can be fitted with a number of accessories, including a large search head for greater depths, a borehole probe for the location of deep rebars and tendon ducts, a calibration block, and replaceable battery packs.

For additional information visit www.elcometer.com or call (800) 521-0635.

Glow little GloBug, glimmer, glimmer

Multiquip Inc. has released two GloBug light towers that flood work areas with 360 degrees of glare-free light. Each lightweight tower includes a 1,000-watt metal halide lamp that illuminates distances of more than 150 feet.



CIRCLE #114 ON READER SERVICE CARD



CIRCLE #36 ON READER SERVICE CARD



The standard Glo-Bug, with a cart for an optional generator, has a maximum mast height of 16 feet. It is fitted with a parking brake, safety winch, quick-disconnect power cable, lifting hook and pneumatic tires.

The Glo-Bug Solo, a stand-alone model, sports a maximum mast height of 13 feet. It is fitted with five counterweighted outriggers for stabilization, and its three-stage mast comes with a 30-inch extension pole.

Both light towers come with a protective canvas cover and a customizable, water-resistant balloon. Optional drum and reflector balloon packages are available. For more information, visit www.multiquip.com or call (800) 421-1244.

One Vision, three new scanners

Three scanning tools from Zircon Corp. employ the company's new CenterVision technology that pinpoints the center of a stud with just one pass.

The new-generation TriScanner OneStep and MultiScanner OneStep



take the guesswork out of finding embedded studs, rebar and other materials. They can scan through up to 3 inches of concrete to locate rebar.

The MultiScanner OneStep is a three-in-one tool that locates studs, joists, metal and

rebar. Besides scanning for wood and metal, it alerts users to the presence of live, unshielded electrical wires, including a function that lets users scan and trace hot AC wires exclusively. The scanner uses an LCD screen.

The TriScanner is similar to the MultiScanner, but offers an LED screen and does not include AC tracing.

Last but not least, Zircon is introducing the ProScanner OneStep. Its floating scanner head locks into fully articulating arms that extend from the handle, allowing the scanner to be placed flat against a wall. It offers three scan modes: stud mode, metal mode and AC scan mode.

All three scanners automatically calibrate while in use and switch to deep scanning as needed.

For more details, visit www.zircon.com or call (800) 245-9265.

Liquid "gloves" protect hands

Gloves In A Bottle helps protect your hands at work by keeping moisture-robbing irritants out while locking natural moisture in. Unlike conventional moisturizers, which attempt to replace the skin's natural moisture, Gloves In A Bottle bonds with the skin to create a barrier much like actual gloves.

Once dry, Gloves In A Bottle is virtually undetectable. It works for hours and comes off naturally with exfoliated skin cells.

It's available at pharmacies nationwide, on the Web at www.glovesinabottle.com or by calling (800) 600-1881.

Power Curbers to offer hydraulic mold lift

Power Curbers Inc. will introduce a hydraulic mold lift designed for the 5700-SUPER-B slipform machine that is used for barrier/parapet work as well as curb-and-gutter and sidewalk applications, depending on the mold attached to the machine.



The new lift will allow machine operators to easily and quickly lift a barrier mold off rebar at the end of a day's pour, making machine cleanup an easier task. With 3 feet of lift already built into the machine, the new hydraulic mold lift gives the machine an extra 2 feet of lift for easier maneuverability. Walls of up to 50 inches (1.3m) in height can be poured.

The mold lift will be introduced at ConExpo/ConAgg March 15-19 at the Las Vegas Convention Center. Power Curbers and its paving company, Power Pavers Inc., will display products at Booth S-8637. For more information, call (704) 647-6133.

Similar systems, different drives

Mi-T-M Corp. has introduced two lines of cold-water aluminum pressure washers, one with belt-drive systems and one with direct drives.

CBA Series aluminum pressure washers with belt-drive systems have been designed for commercial applications. The lightweight aluminum frame is popular in coastal areas where salt water may cause rust and corrosion issues.

Standard features include 9.0 to 13.0 horsepower Honda or Subaru engines, a belt-drive triplex piston pump with ceramic plungers, a water filter with clear sleeve for screen inspection, a dual cogged belt drive system to prevent slippage, ¾6-inch aluminum base plates with an isolator plate to reduce vibration, a 50-foot nonmarking pressure hose with quick connects, swivel and bend restrictors, a professional-grade trigger gun and quick-connect nozzles.





Mi-T-M's aluminum pressure washers with direct drives, called the CA Series,

are also for commercial applications. The CA Series machines come with 5.5 to 13.0 horsepower Honda or Subaru engines, direct-drive triplex piston pumps with ceramic plungers, and optional adjustable low-pressure detergent injection, along with features common to the CBA.

For more information, visit www.mitm.com or call (800) 553-9053.







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