A Special Supplement for Polishers

Vol. 10 No. 5 • July 2010 • $6.95

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The Journal of Decorative Concrete

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A Professional Trade Publications Magazine

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Dear Readers,

If there is a silver lining to this recession, it's the positive way our industry responded to the first annual Concrete Decor Show & Spring Training. The turnout of nearly 1,500 people from every corner of the United States and even abroad was an indication of the enthusiasm and determination of this industry, as well as of the direction in which it's heading.

Nearly 10 years ago, during another recession, the first issue of *Concrete Decor* magazine unveiled some exciting new ways to treat new and existing concrete applications. And so it has continued. What is surprising about then and now is the diversity of people from different professional and artistic backgrounds that have become involved in decorative concrete. While an increasing number of concrete contractors are getting involved, so too are an even larger number of individuals from other trades.

Today, it is our contention that the growing diversity of decorative concrete is a result of its ability to provide uniquely creative and highly sustainable solutions when compared to a host of other building options that are used traditionally. What the world is quickly recognizing is that decorative concrete can mimic most other finishing systems — but it can also exceed those systems in terms of performance while delivering a finish that is unlike any other.

To compete long-term and gain increasing acceptance in today's global market, decorative concrete must move from being a business opportunity to an industry opportunity. Only then will our educational endeavors evolve into guidelines, only then will we develop strategic plans for growing our footprint in the areas where we now compete, and only then will architectural design communities fully utilize the professional solutions we offer.

The Concrete Decor Show & Spring Training is helping to uncovering exciting new frontiers in the building industry, and we invite you to discover the opportunity it holds for you in Nashville next March 15-18, 2011.

Also, I'd like to direct your attention to the back of our magazine. We've prepared a special supplement that focuses on concrete polishing, which we call *Pro Polisher.* It's packed with great articles from some of the industry's leading experts. What's more, it's just one example of how *Concrete Decor* plans to better serve concrete and hard-surface polishers in the coming months and years.

Sincerely,

Bent Mikkelsen, Publisher

Your password to view articles on ConcreteDecor.net:
Polisher

Enter this access code to view current and older articles in *Concrete Decor's* online archive. The archive can be found and searched at www.concretedecor.net. The password changes every issue.

To continue receiving both the print magazine and access to our archives, keep renewing your subscription to *Concrete Decor,* the industry's foremost magazine on decorative concrete.

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The Journal of Decorative Concrete

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TEAMWORK

QUALITY & SERVICE: THE PERFECT DOUBLE PLAY

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Brian Foster, *President*
Foster Coating Concepts LLC.
Traverse City, Michigan

"So many times I've been stuck on a project with little to no help from my supplier. By contrast Crown steps up to the plate when I have questions or need advice on a complex job. Furthermore, my local rep always makes sure I have the latest color charts and brochures so my customers have a clear understanding of the products I sell and install. Crown's products are far superior to any others I've ever used. The polyurea topcoats are unbelievably clear and shiny and seem to never wear out. Crown really understands the importance of taking care of the client at the local level. "

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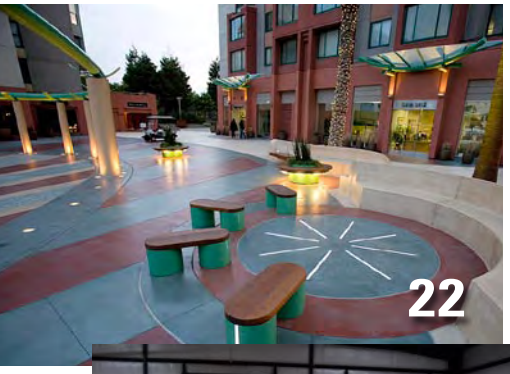

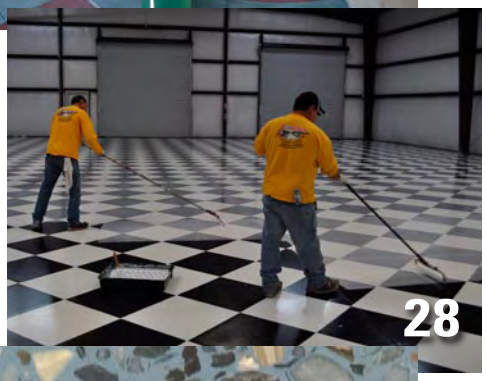

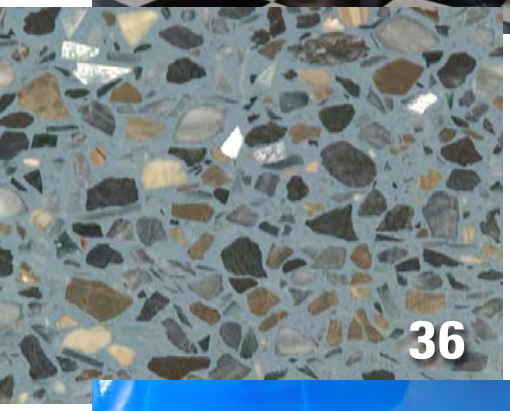

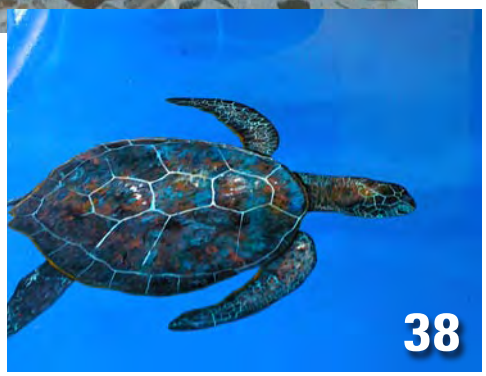

On the Cover: Julio Hallack, of California-based Concrete By Hallack, inspects a high-end garage floor project nicknamed "The Toy Box." The checkerboard pattern consists of 2,400 squares. For more about this Modesto, Calif., project, see page 28.

Photo courtesy of Concrete by Hallack

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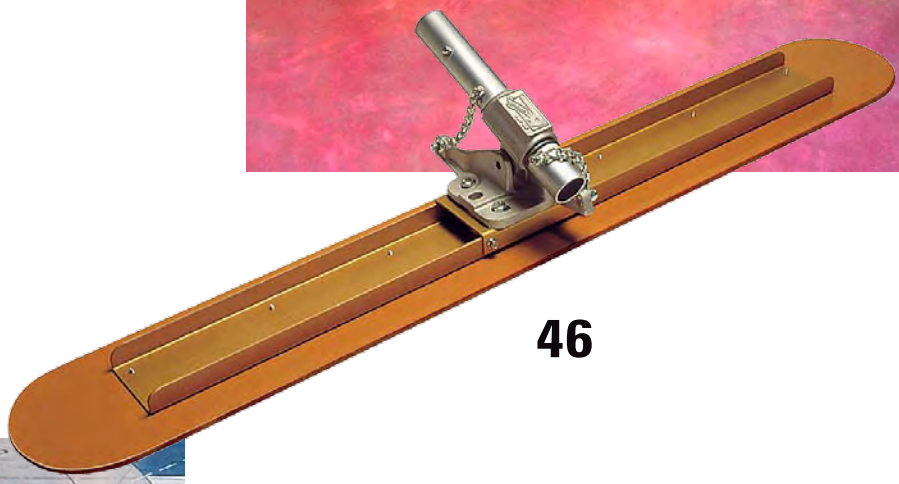

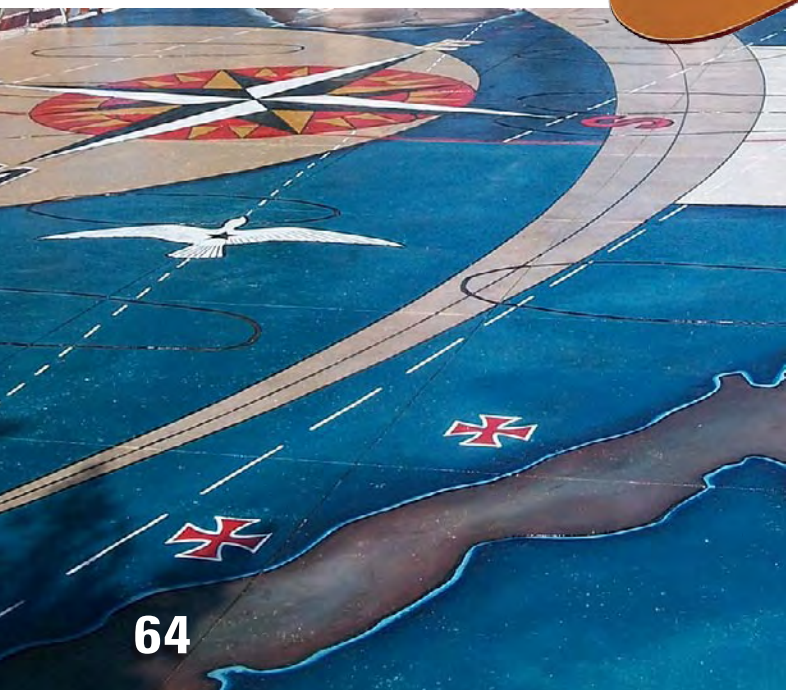

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Industry News

Decorative concrete contest accepting submissions

The Decorative Concrete Council, a specialty council of the American Society of Concrete Contractors, has announced its third annual Decorative Concrete Awards. The competition is open to DCC members and nonmembers.

Entries are invited in the following categories: overlays (spray textures and stamped), cast-in-place (stamped and special finishes), stained, stenciled, polished, countertops, vertical applications, concrete artistry and multiple applications. With the exception of countertops, two awards may be given in each category, for projects of less than 1,500 square feet and projects of more than 1,500 square feet.

Submissions will be judged on craftsmanship, aesthetics, functionality and creativity.

The deadline for entry is Sept. 30, 2010.

(866) 788-2722

www.ascconline.org

Concrete Countertop Institute announces certification program

The Concrete Countertop Institute has developed a concrete countertop certification program, which is available to any concrete countertop professional. The certification program tests quality of the end product from a client's point of view using project evaluations, and it evaluates general knowledge and business practices using a written exam. The only cost for the program is administrative fees submitted with the projects and exam.

To complete the program, concrete countertop professionals must submit multiple photos of three projects for paying clients. The photos should depict certain steps of the manufacturing process to demonstrate basic structural integrity, as well as show the finished, installed project. Client contact information is also required, and CCI will interview clients to determine whether the professional used good business practices in estimating and contracting the project and dealing with any problems that occurred. There is also a written examination covering quality standards, basic concrete and countertop knowledge, and sales and marketing practices.

Once professionals complete the program, they will receive a certificate and logo, and they will be listed in a special section on the Concrete Countertop Institute Web site. Annual recertification will be required.

(888) 386-7711

www.concretecountertopinstitute.com/modules/info/certification.html

Sto certified for EIFS Quality Assurance Program

Sto Corp. is now certified as a Licensed Manufacturer with EIFS Quality Assurance Program Inc.

The EIFS Quality Assurance Program was established in Canada to provide project owners and contractors the assurance that the materials and installation of an exterior insulation and finish system will meet the high standards of the program. Sto Corp. has been an active supporter of the program since its inception and is one of the first manufacturers licensed in the program. The program is administered by the EIFS Council of Canada.

(800) 221-2397

www.stocorp.com

Lafarge North America debuts green headquarters

Lafarge North America has moved into its new headquarters in Reston, Va. The new space has been designed to maximize the use of recycled materials and create a space that will use electricity, water and other resources in a more efficient manner.

Lafarge's search for new office space started more than one year ago. The move committee surveyed more than 20 potential sites and actively negotiated with five potentials before deciding on the office space in Reston.

The building's sustainable features include:

- Interior concrete walkways that release lower amounts of volatile organic compounds (VOCs) compared to carpet.
- Lafarge synthetic gypsum wallboard, which uses 99 percent recycled material.
- A sustainable design focused on allowing more natural light inside, resulting in lower demand for artificial lighting.
- Thermal monitoring that ensures different sections of the building are being heated and cooled individually.
- Water-efficient toilets, sinks and other items.
- Motion-sensor-activated lights.

In addition, more than 90 percent of the construction waste from the Lafarge headquarters will be recycled.

www.lafarge-na.com

New edition of ASTM sustainability standards

A new edition of ASTM International Standards on Sustainability in Building, a compilation that includes 150 ASTM standards that address sustainability or aspects of sustainability relative to building, including sustainable design, construction and operation of buildings, is available on CD-ROM.

The collection includes all of the ASTM International standards referenced by the Federal Green Construction Guide for Specifiers as of January 2010, the International Green Construction Code as of the Public Version draft of March 2010, and the Green Globes green building rating program as of March 2010.

www.astm.org

New ASTM standard for self-consolidating mixes

A new ASTM International standard covers an easy way for concrete producers to develop a means of quality control when measuring and maintaining the stability of self-consolidating concrete mixtures.

The new standard is ASTM C1712, Test Method for Rapid Assessment of Static Segregation Resistance of Self-Consolidating Concrete Using Penetration Test. The test method described in ASTM C1712 can be used in either the laboratory or in the field. Results can be obtained within minutes of self-consolidating concrete production or placement, allowing for adjustments to the mix in the lab or on the fly.

Because C1712 is a new standard, the subcommittee is interested in

feedback from users so suggested improvements can be discussed and modifications made.

The subcommittee is also planning on developing a proposed new standard for casting self-consolidating concrete specimens without using mechanical assistance or vibration, and it is looking for comments, practical experiences and studies from concrete industry professionals in this area.

www.astm.org

Dur-A-Flex receives award

Jon Matcheson and Bridgett Freeman of Dur-A-Flex Inc. collected the Excellence in Innovation Award at the 2010 Manufacturing Extension Partnership National Conference, held in May.

The MEP Excellence in Innovation award celebrates the success of MEP clients and recognizes those who made significant impacts on the national MEP system. The individuals or groups nominated have demonstrated an innovative commitment to business growth within the manufacturing industry.

Dur-A-Flex won the award for the company's University Contractor Academy program. The program focuses on helping customers become more profitable and shows them ways to propel their businesses into a more stable and profitable future.

www.dur-a-flex.com

Sakrete Maximizer now available at Home Depot stores

Sakrete has introduced Maximizer in several Home Depot markets in the eastern United States, including in Florida, New York, Maryland, Delaware and Washington, D.C.

Maximizer is a brand of lightweight, high-yield concrete mix. It features a proprietary formula with a higher volume of cement for a more uniform mix, making it easier to prepare and apply. Maximizer is also 40 percent stronger, with an ultimate compressive strength of 5,500 psi versus 3,500 psi for typical concrete mixes.

(800) 738-1621

www.sakrete.com

Chem Link names new regional manager

Jeff Schuette was recently named regional manager of Michigan and eastern Canada for Chem Link. He now works with Chem Link representatives in the states surrounding Michigan and eastern Canada to serve contractors and distributors in those areas. He previously worked for Chem Link's Contractor Hot Line.

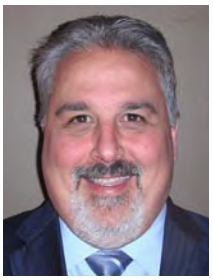
Schuette owned a landscape and construction company for 11 years before selling the landscape division to concentrate on construction. Originally

from Ohio, he moved to Michigan in 2003 and specialized in commercial multifamily and custom residential construction.

(800) 826-1681

www.chemlinkinc.com

Aztec Products hires sales manager for Canada



Aztec Products Inc. has hired Joe Gambacort as Canadian regional sales manager.

Gambacort has extensive experience in the Canadian sanitation marketplace as well as the concrete grinding and polishing marketplace. He will operate out of Aztec's new branch office in Brantford, Ontario.

Aztec floor-cleaning machines are engineered for quality work at high speeds.

www.aztecproducts.com

New hires at Concrete Coatings

Concrete Coatings Inc. has announced Mike Sessions as Northwestern sales manager.

Sessions has more than 13 years of professional experience in sales, marketing and management. Most recently he worked as a store manager for Concrete Construction Supply in Idaho. His new responsibilities include maintaining and developing new customers in Oregon, Washington, Idaho, Montana, North Dakota and South Dakota. He will also assist in product demonstrations and technical support offered by Concrete Coatings.

The company has also hired Cory Christensen as its business development manager. Christensen recently graduated from Brigham Young University with a degree in business management. He worked for the company through high school before leaving for college. Christensen will build Concrete Coatings' private-label business dealings, work with buying groups and allocate leads to the Concrete Coatings sales team.

www.concretecoatingsinc.com

Nawkaw names sales manager

Nawkaw Corp. has named Mike Honeyman sales manager of the Southwest territory.

Honeyman has worked in many capacities for Nawkaw since 1996. He has been Nawkaw's top crew chief and, most recently, operations manager for staining, cleaning, restoration and training. Honeyman's experience includes a number of high-profile restoration projects.

(866) 462-9529

www.nawkaw.com

Beat the Heat with Evaporation Retarders

Winning the battle with Mother Nature becomes a little challenging this time of year, at the same time our services are in highest demand. There are ways to combat the heat and the challenges it creates, but few are profitable. You can lessen the amount you pour (not profitable). You can hire more hands (not profitable). You can take vacation until the weather breaks (definitely not profitable). I'm proposing something that doesn't require more hands or less footage poured.

by Doug Carlton

I was surprised the other day when I swung into our local concrete supply house to pick up a product that I assumed everyone was using. This supplier specializes in products for decorative concrete tradesmen, so it shocked me when I asked for an evaporation retarder and was told few other contractors used this product. Now I'm not sure how many of our readers use "film" retarders, but if you aren't, you are really missing out on something our crew wouldn't live without. Let me explain.

An evaporation retarder is a spray of film that is applied to the wet concrete surface shortly after placement. The idea here is for the film to help hold moisture into the surface so elements like wind and sun will not dry out your future work of art. The film creates a barrier that the wind finds harder to penetrate, and this keeps your surface in a more plastic state. I won't bore you with why this product works but I'm here to tell you it really does. If you are pouring decorative concrete you owe it to yourself to give it a try.

The benefits

This is a business of eliminating as many potential problems as possible. The more water your concrete has in it, the greater chance of problems like cracking, shrinking and low strength. Using a retarder allows you to pour drier concrete without the challenges of typical dry concrete, even on hot days.

The temptation on hot days is to dump water into the mix to create an easier lay-down. Many have the false assumption that this will create a longer window to create the decorative surface desired. This is not true. In actuality, using a spray-on retarder over dry concrete will create a wider window for decorative practices.

Many contractors find themselves coloring concrete surfaces with color hardeners. This type of coloring is extremely effective but can compound the drying process of the concrete surface. Some contractors stay away from this coloring type for just this reason. Adding a dry powder to an already drying surface just doesn't make sense to these folks. The counter

to this process is applying a film of retarder directly over the broadcasted color hardener. The color will work into the surface, edges and scoring with ease regardless of outside elements like wind and sun. This film can be sprayed through a pump-up sprayer several times during the drying process. The product comes in concentrate form, so it can be mixed as needed without adding much expense.

Also, a common complaint with air-entrainment admixtures used in freeze-thaw areas is the spongy feel of the surface as it dries. Using a film retarder will help with this situation. And I have not noticed any conflict between the film and color or sealers.

When retarders are used, I have noticed more consistency in imprinted concrete, especially with interlocking patterns. This is attributable to the surface moisture that is maintained via the retarder. No doubt this film applied to the drying concrete will assist in the curing process. Many new contractors stumble over the "stress fractures" or surface cracking that comes from tearing the concrete surface as it's imprinted. This type of cracking is not good on the eyes and will have you answering questions from your customers. Use of a spray retarder will greatly reduce this type of surface cracking by trapping more moisture into an imprinted surface. Using less aggressive or deep stamp tools will help as well.

Stop by your local supply house and pickup a gallon for your next pour. You won't be disappointed. The goal here is affordable ways to provide quality concrete for your customers. Please let me know how these products and practices work for you.

Use these links to find out more about three common retarders:

Confilm by Master Builders
www.basf-admixtures.com

Brickform Evaporation Retarder
www.brickform.com

Bonway Evaporation Retarder
www.bontool.com

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

Photo courtesy of Doug Carlton

Doug Carlton sprays film onto a patio freshly colored with L.M. Scofield hardener. Next, he would stamp with an interlocking Arizona Flagstone pattern from Proline Concrete Tools. Gusts of up to 30 mph hit soon after this picture was taken, but the film held moisture fine and the imprint was consistent.

Iron Oxide: The Workhorse

The products and finishes in the decorative industry are becoming more sophisticated — polymer-modified toppings, nanotechnology sealers, and sustainable stains and dyes to name a few. These high-end materials and systems are the new "buzz" in the industry and seemed to dominate the trade-show conversations this past winter season. New technology is great, and I am a big supporter of REAL technological advancements. But at the same time, we all need to remember the old tried-and-true products that still make up a large portion of the industry, and more importantly, refresh ourselves on the fundamentals, the right way to use them.

by Chris Sullivan

As often happens, a recent phone call started me thinking about this. The person on the other end was asking why their recently poured colored-concrete basement floor was the wrong color, had a white haze over the surface, and was darker on the edges compared to the middle. As I spent the next 10 minutes explaining the cause of each issue, I realized how important the basic products and the fundamentals of their installation are in what we do every day.

When it comes to basic nonglamorous products that still have a huge impact on our industry, you don't have to look much further than iron oxide pigments. The workhorse product that started the decorative concrete industry more than 50 years ago is still the single most-consumed product in our industry today. Also known as integral stain, dye, or just plain color, iron oxide is nothing more than manufactured rust. What makes it such a workhorse and a staple in our industry is that it is the only colorant that can withstand the extreme alkaline environment of concrete without fading or leaching.

Iron oxide particles, as produced for the construction industry, are 10 times finer than cement particles. When added into a concrete mix, the iron oxide particles actually surround and coat the cement particles. This is why integral color is dosed or metered based on the cement content, not on the amount of sand, stone or water. That the average color loading is only 2.5 pounds of pigment per 94 pounds of cement (2.6 percent) demonstrates the coloring power of iron oxide pigments. This coloring power is called tinting strength,

and it is important to note that not all iron oxides have the same tinting strengths. Not only do different manufacturing processes affect the tinting strength, but adding inert fillers when blending colors can dilute or reduce the tinting strength of pigments. To ensure you are getting the strongest tinting strength, do your homework and avoid cheap color that contains fillers.

In addition to the basics of what iron oxide pigments are, I think knowing the fundamentals of how they are used and understanding common problems associated with their use are even more important. There are five key components that determine the final color when using iron oxide pigments in concrete.

The pigment: As we discussed previously, using a good quality pigment from a reputable manufacturer is important. Proper blending and color consistency is something you as the installer have little to no control over, so trust in your supplier is important.

Water content: Also known as water-to-cement ratio, this is by far the No. 1 cause of colored concrete issues. The amount of water used to make concrete has a dramatic and permanent effect on the final color. The more water used, the lighter the color. This not only holds true for water used in the mix, but also for any water added to the surface during the finishing process. Use as little water as possible, and consider chemical admixtures (plasticizers, water reducers, etc.) to reduce the amount of water needed. No matter what — stay consistent.

Cement content: The next-biggest factor that affects the final color is the cement content. The amount of cement used in a mix is critical because it is what the pigment content is based on. Start changing the amount of cement from batch to batch and you WILL get a color change. The place where most installers get in trouble is dosing by "sack mix," not by actual cement weight. Five-sack mix can have actual cement content ranging from 2,500 pounds to 3,500 pounds.

Cement color: Probably the most misunderstood and misdiagnosed cause of colored concrete issues is the color of the cement and the impact it has on the final color. While most cement manufacturers strive for overall product consistency, they do not test for color. Tests have found that cement coming from the same plant can have dramatic color variances over a period of weeks and months. If you have long time gaps (weeks or months) between colored pours, it might be worth your time and money to keep cement retains to ensure the color has not changed.

Aggregate color: While aggregate color has little to no direct impact on actual color, it can have an indirect impact on the overall mix. A sand mix will not develop the same color as an aggressive stone mix. Also, consider how aggregate will impact the final color if an exposed aggregate finish is performed.

As with most tried-and-true products and processes, success usually comes down to one tried-and-true guideline. In the case of iron oxide pigments used in integral color, the rule of thumb is — stay consistent! Control your environment, control your water, and try to keep everything as consistent as possible. Iron oxide pigments are not going anywhere soon, so the more you understand regarding the basics of how they work, the better off you will be.

Photo courtesy of Chris Sullivan

Using excess water will lighten and discolor integrally colored concrete. This is especially true if water is used during the finishing process, which resulted in broom marks and streaks on this concrete slab.

Chris Sullivan is vice president of sales and marketing with ChemSystems Inc. He has presented seminars and demonstrations throughout North America, including at World of Concrete and the Concrete Decor Show & Spring Training. Contact him at trowelanderror@protradepub.com.

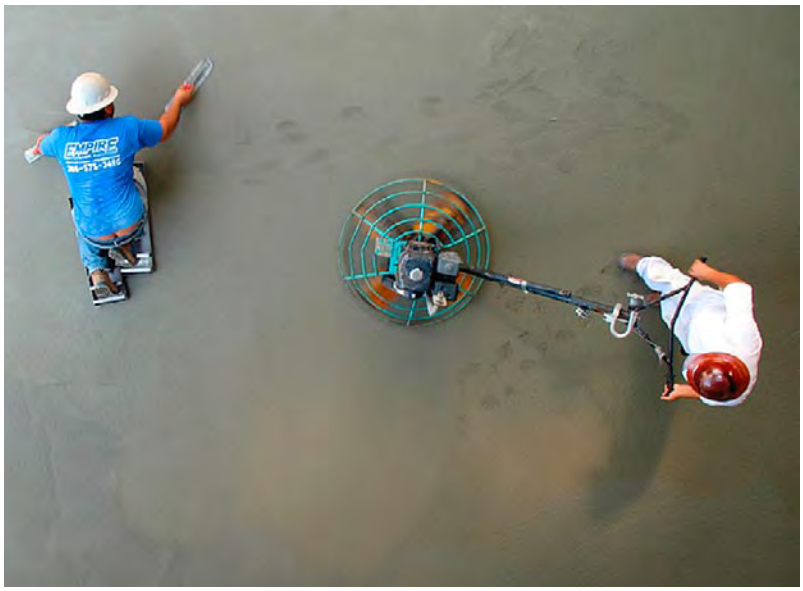


Photo courtesy of the concretist

A thin-topping slab at the Daffodil Terrace, Charles Hosmer Morse Museum of American Art, Winter Park, Fla. Natural gray concrete was floated by machine and subsequently troweled by hand, creating a sporadic leathery sweat finish.

A Tale of Two Topping Slabs

This column has little to do with discussions of intuitive freestyle art versus disciplined mechanical graphics, or with criticism of superfluous decoration as contrasted with really spare concrete — my normal "literary" territory. It's a column about me and a museum. It's a tale of two topping slabs.

by Mike Miller

In 1999, I made the decision to call myself not just a concretist, but also an artist. I wasn't really comfortable with this. That's why I did it. I'd just completed a pivotal project, which provided a transformative experience, and I longed to stretch and grow. I wanted the return of that queasy feeling in my stomach that comes with walking the edge of a precipice.

At least once a week I was called a snake. They'd say, "Miller, you're a snake!" And I was. I'd always been a bit of a snake. (My logo was a black adder.) It was time to make like a real snake and shed my skin. A bona fide re-creation!

The pivotal project was a wing of a Florida museum, the Charles Hosmer Morse Museum of American Art. It houses a comprehensive collection of works by Louis Comfort Tiffany, master of the decorative arts, revolutionary designer, and innovator in stained glass lamps, windows and interiors. I consulted on the placement of a small, unjointed topping slab over a deep, stable structural slab. This was simple, a slam-dunk. Subsequently, I traveled east to install a jointed, stained, dyed and pigmented overlay over the topping slab. It was a re-creation of the concrete of the historic chapel in Laurelton Hall, Tiffany's Long Island estate.

Laurelton Hall, completed in 1905 and cited as Tiffany's greatest work of art, was destroyed by fire in 1957. Fortunately, the chapel and many other artifacts were salvageable and moved to

Photo courtesy of the concretist

The exhibit designer and museum director were looking for the natural patina of erosion. The concretist's crew scoured the museum's warehouse and chose this artifact as a reference for background color and feel.

Photo courtesy of The Charles Hosmer Morse Museum of American Art

The Daffodil Terrace was named after floral column capitals featuring daffodils in embedded cast and cut glass, in precast natural gray concrete.

Florida. They became the seeds of the Morse Museum.

This was my first exposure to Tiffany's genius. What really grabbed me was his sense of materials. Layered colors and textures ... so many layers! And layers of light. He was a fine artist who not only designed, he collected and composed. What he couldn't source, he produced. This was the core of it ... not only an artist, he was a master! Like the color-makers of old, his gift was recognizing beauty in what was rough ... raw, awesome glass. I can't help myself — it was "raw-some"!

At the start of his career, Tiffany used cheap jelly jars and bottles. They had curious mineral impurities that finer glass lacked. Unable to convince other glassmakers to leave the impurities in, he began making his own. Tiffany used opalescent and variegated glass in a variety of colors to create a unique style that contrasted with painting in enamels on colorless glass, the dominant method of creating stained glass for hundreds of years in Europe. Later, he would continue to bend and meld materials and styles, incorporating fused and sculptural molded glass. If this sounds similar to the sensibilities of sensory concrete (less control beats more, more variegation beats less, question authority, burn your bra), it should.

A seed had been planted. I can pinpoint the moment of conception of sensory concrete. It began with intoxicants, followed by a heightened awareness of my immediate surroundings ... a heady morning that included screed posts and the fragrance of sweat off the coarse Latin workers, followed by a lunch of sweet Cuban coffee and a Havana-style ham sandwich. Then, a sweat texture troweled into the slab. Finally, I spent a leisurely afternoon in the museum with Louis Comfort Tiffany. I spent plenty of time pondering his work while flying home.

Months passed, still 1999, and I returned to apply the finishes. This involved many steps and a lot more time. The original pieces that composed the chapel were now installed. It was stunning! Working in that space was working in the presence of God. Not like there was much pressure — rather, he was looking over my shoulder. Wonderful! Again, heady! This was a place and a moment where something important might happen.

Each step wouldn't take long and required substantial drying time. I worked at night, so there was time to wander

Photo courtesy of the concretist

Three types of reinforcement were use to manage shrinkage cracking of the thin Daffodil Terrace slab, with no jointing.

and peruse the museum alone. Time to study and think. Just like before, I was in awe of the materials and the man and his organization. (More than an artist, Tiffany was a visionary technologist and provocateur/promoter, surrounded by other fine artists.) I was in awe, but also inspired. I developed a plan. I was no artist, with no background or training in art, but I appreciated it, had opinions, and could speak of it passionately and with some eloquence. They weren't educated words, but they were honest and inspired, perhaps inspirational. Sweet, simple messages from a simple guy! In addition to this passion for art and materials, I possessed a passion for concrete. I also possessed a somewhat trained but mostly intuitive understanding of this most basic, yet precious material. And what I didn't know, I was willing to search for and discover. Just like a belief in God requires a leap of faith, I had faith that my understanding, intuition and searching would yield success. And if not always successful, I would have enough successes to sustain the effort.

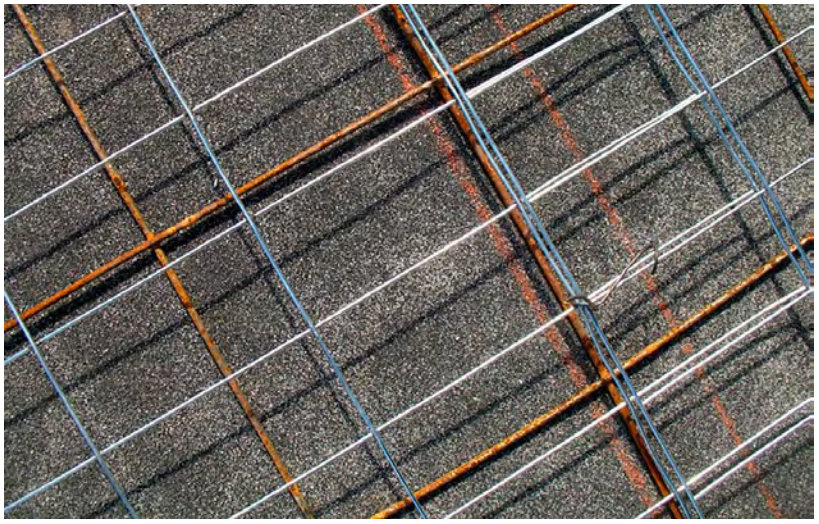
I, like Tiffany, would surround myself with artists, providing them with my passion and knowledge of concrete and a venue. I would turn artists into concrete technicians, and they would turn me into an artist. And they did! So ends the tale of the first topping slab, and how it transformed Michael Miller, the concretist, into an artist, and the concretist inc. into an art and design studio — materials-oriented, honest, willing to take chances, expecting good fortune through often unexpected results.

This year's return

Fast-forward to 2010. I still call myself an artist — I'm comfortable with this now. The concretist inc. is still structured as an art/design studio, but the economy has shifted the nature of our projects. They're still materials-oriented, honest, sometimes to the point of being bare bones, and still yield pleasant surprises. However, there's one helluva lot less art, and instead, more formulaic consulting and colorist work ... and we're happy to have it! While there's a lot less business, we're fortunate to have enough. This includes many repeat customers. This includes the Morse. And this is the tale of the second topping slab.

I received a call from George Sexton, exhibit designer, about adding a new wing, re-creating another space from Laurelton Hall, the Daffodil Terrace. A delightful outdoor space would be re-created in an indoor atrium. The Daffodil Terrace was named after lovely floral column capitals, featuring daffodils in embedded cast and cut glass, in precast natural gray concrete. These, on top of gold-veined, pale suede marble columns. And these, on a hand-tooled, natural gray slab. That is, we assumed it was natural gray. Our references were black-and-white photos. Even if the original was pink, we were assuming a natural gray. The colorist challenge here was recreating

Photos courtesy of the concretist



Above: Typical welded wire fabric — a tight grid of galvanized utility fencing, with the roll of fencing material tied to the flat sheets of welded wire.

Right: Mike Miller, concretist, and his daughter, field biologist Karley Miller, preen in front of the finished (not so much as a single crack … that's not like him!) Daffodil Terrace slab.

"the patina." By this, I don't mean any kind of acid stain — no rusts or coppers, nothing as strong as an ebony. George and the museum director, Larry Rugerrio, were looking for the natural patina of erosion through weather and use, a slab burnished by shoe leather and heels, stained by cigar ashes, white wine, extra virgin olive oil and tannins. Not a challenge, as this about describes my patio back home after a big weekend. The real challenge was structural, in the design of the slab itself.

The issues:

- The thin (3-inch) architectural topping slab wasn't that large (roughly 28 feet by 38 feet), but it was large enough to require contraction jointing.
- The topping slab was designed with joints that were adequate as contraction joints. However, they were to be aligned off column artifacts, which weren't to be conservator-installed until one month after placement. Additional considerations disallowed laying these joints out in advance.
- The deep (8-inch-plus), broom-finished structural slab was already tooled with contraction joints, uncoordinated with the topping slab.

The answers:

- Three types of progressively finer and tighter reinforcement were used: first, welded wire sheets; second, rolls of finer fencing material, with a tighter grid; third, "stealth" nylon fibers. This was to prevent any large cracks that might vertically displace, significantly open and spall. The idea was that if we were to get cracks, they'd be small, evenly distributed and aesthetically pleasing, kind of like crazing.
- There'd be no contraction jointing. I would return later, and based on the conservator's column placement, lay out aesthetic joints, hand-cut with a grinder, and crack-chase to approximate the historic tooled joints. There would be no straightedges utilized. Joints would slightly "wow and flutter," possessing a more human, less mechanical quality.
- Rolls of roofing material were used as a bond-breaker between the structural and topping slabs. This material was thick and stiff enough to span existing broad and deep-tooled joints, preventing them from ghost-imaging through the topping slab. This also prevented restrained shrinkage from the joints and broom finish. Most folks are looking for a bond, but I prefer the opposite — no restraint. I want my topping slab in boxers, not briefs. This "thin" slab weighs some 35,000 pounds, and if I understand mass and gravity correctly, it's not likely going anywhere (except shrinking inward on itself).

My idea is: We have a heavy battleship, floating on the sea. It works for our navy. It seems to have worked for me. This method of using multiple styles of reinforcement, along with a sheet-style bond-breaker, also works great on really thin (1-inch to 1 1/2-inch) slabs, including radiant-heated ones. The step-downs in steel can go from rebar to welded wire to fibers, or from welded wire to fencing material to fibers, depending upon the section of the slab and the engineering constraints. I've often utilized this for people who just don't like joints. They'd prefer to take their chances with some minor cracking.

There you have it, a tale of two topping slabs. Repeat client. Lots of years in between and really different circumstances. One, where I really worked on and manipulated the slab on behalf of the Tiffany museum, and, one, where the slab, the museum and Tiffany really worked on and manipulated me.

By the way, as for slab two, we've been back to joint and patina. There's not a single crack, large or small! Forget about the American Concrete Institute — it seems that sometimes not even God requires a contraction joint.

Mike Miller is managing principal of The Concretist, an association of artists, craftsmen and others producing sensory-concrete art and architecture in cement, stone, glass and steel. The Concretist is headquartered in Benicia, Calif., with additional locations in northeastern Nevada and Southeast Asia. Visit Theconcretist.com and Thevisualconcretegroup.com. Mike Miller can be contacted at miller@theconcretist.com.

Protecting Your Crew from Silica Dust and Lead

This month's column covers a topic that could determine the sustainability of your business: indoor air quality both during and after construction. Although air quality for your workers and your clients has always been your responsibility, new federal rules are making it essential.

by William D. Palmer Jr.

The new requirement you need to know about is the Environmental Protection Agency's Renovation, Repair and Painting Rule, which tackles the problem of lead dust. If you ever do work in homes, child care centers or schools that were built prior to 1978, you need to understand the RRP Rule, which became effective April 22, 2010. The RRP Rule imposes strict lead-safe work practice requirements on contractors. Failing to comply with this new rule is really not an option if you want to stay in business. The EPA can fine you up to $32,500 per violation per day.

Most concrete work, even in older homes, doesn't involve paint removal. If you're sure you will never be called upon to remove or disturb lead paint, then move on to the second part of this article, which discusses silica dust control. But if there's a chance you will get work requiring lead-safe practices — for example, grinding or cutting a surface with lead-based paint on it — do what you can to learn the requirements or else face the prospects of EPA fines and owner lawsuits.

Getting the lead out

Lead has been a priority for the EPA for more than 30 years. Lead poisoning, especially of children, results in memory loss, learning disabilities and diminished motor skills. The most common way children are exposed to lead is from lead paint, especially during renovation work. Whether you believe this is a real risk or not is irrelevant — the law will show little mercy on this issue.

Lead paint was banned in 1978 but obviously the problem didn't go away. The U.S. Department of Housing and Urban Development estimates that there are about 38 million homes in the United States that contain lead-based paint. If a contractor disturbs more than 6 square feet of lead paint, the RRP Rule takes effect.

Some of the requirements of the RRP Rule are:

- Contracting companies must be certified by the EPA. This requires filling out a two-page application and paying a fee of $300.
- You must have an RRP-certified worker on each job where lead-safe

work practices are required. To get certified, the person needs to take an eight-hour training class from an EPA-approved trainer. You can find a link to information about these training classes on the EPA's RRP Web site. An unscientific survey of these classes shows that the cost is around $200.

- You must test any painted surfaces before disturbing them, although there are some exceptions. The best approach is to test the paint in any home built before 1978 with an EPA-approved test kit.
- You must follow lead-safe work practices when the paint contains lead.
- You must provide the owner with a Renovate Right brochure, which can be downloaded at the EPA's Web site. And you must verify that the owner received this and understands the provisions — in writing is best.

Lead-safe work practices include using tools with HEPA-filtered vacuums, closing off all potential escape routes for dust, and carefully cleaning the entire area at the end of the job. Even your workers' clothing must be cleaned so that they don't take lead-tainted dust home with them. There is currently an "opt-out" provision in the rule that allows an owner to state that no young children or pregnant women will be exposed to the dust, although the EPA is proposing to remove that exemption. EPA estimates that the cost of all this ranges from $8 to $167 per job — that obviously depends on how many such jobs you get. But don't get caught unawares by this new rule. Get the EPA's compliance guide for contractors (via the link at the end of this story) and read it carefully prior to disturbing any painted surfaces in older buildings.

Crystalline silica dust-up

"Dust" is any small particles less than 500 micrometers in diameter. Crystalline silica is quartz. Nearly all concrete contains quartz from the sand in the mix. The dust that is of most concern to contractors is respirable dust, smaller than 5 micrometers. "Respirable" means the dust is small enough to be breathed into the lungs. Breathing respirable crystalline silica dust, which is generated by sawing, drilling or grinding concrete, can cause silicosis, in which the dust creates scar tissue in the lungs, reducing breathing capacity and increasing susceptibility to lung infections. The Centers for Disease Control & Prevention estimates that about 16,000 people died as a result of silicosis between 1968 and 2002, and many of those deaths were construction-related.

The Occupational Safety and Health Administration (OSHA) has established Permissible Exposure Limits for airborne crystalline silica. While measuring dust levels is possible with the right equipment, it's safe to say that if you can see dust in the air then the level is too high to be breathing it. Although respirable dust is too small to see, it is nearly always accompanied by larger visible dust.

The three ways to keep your workers safe from airborne crystalline silica dust are to prevent the dust from becoming airborne (dust suppression), keep workers away from dusty areas, or use respirators. The best, and the OSHA-preferred method, is to prevent the dust from getting into the air in the first place. These "engineered controls" are vacuum systems or wet-cutting or grinding methods. There are some good vacuum systems available today, but we all know that having such a system handy when you're running around a job site with a cutoff saw is inconvenient. That typically means the next best approach, a respirator.

Paper dust masks cannot filter out respirable crystalline silica dust. It's that simple. Relying on dust masks doesn't protect your workers and doesn't protect your company if someone ends up with silicosis. Even good respirators can be ineffective with workers who have beards or mustaches. It is the employer's responsibility to make sure workers are protected. Half- or full-mask respirators with replaceable N95 filters are the minimum protection required and you should test them with your workers to assure good fits.

Those who are nearby and inhale only casual dust will seldom breathe in enough dust to create a real problem. But as you are only too aware, an owner's perception can be more important than reality. Controlling dust at the source, especially on interior projects, is the best approach.

William D. Palmer Jr., P.E., is with Complete Construction Consultants, where he develops technical and educational resources for the construction industry. He can be reached at wpalmer@cee3.com.

More information about lead paint issues

EPA lead-based paint compliance guide:
www.epa.gov/lead/pubs/sbcomplianceguide.pdf

EPA Renovate Right brochure:
www.epa.gov/lead/pubs/renovaterightbrochure.pdf

HUD information about lead-based paint:
portal.hud.gov/portal/page/portal/HUD/press/press_releases_media_advisories/2010/HUDNo.10-082

EPA RRP training classes:
www.epa.gov/lead/pubs/renovation.htm

More information on silica dust control

OSHA:
www.osha.gov/Publications/3362silica-exposures.pdf

The International Concrete Repair Institute (ICRI):
www.icri.org/PUBLICATIONS/2009/PDFs/septoct09/CRBSeptOct09_Silica.pdf

American Society of Concrete Contractors:
www.ascconline.org/SafetyBulletins/SBSilicaDustExposureWebSC.pdf

Centers for Disease Control & Prevention/NIOSH:
www.cdc.gov/niosh/topics/silica/default.html
www.cdc.gov/mmwr/preview/mmwrhtml/mm5416a2.htm

Bay Area Concretes Inc.

Livermore, Calif.

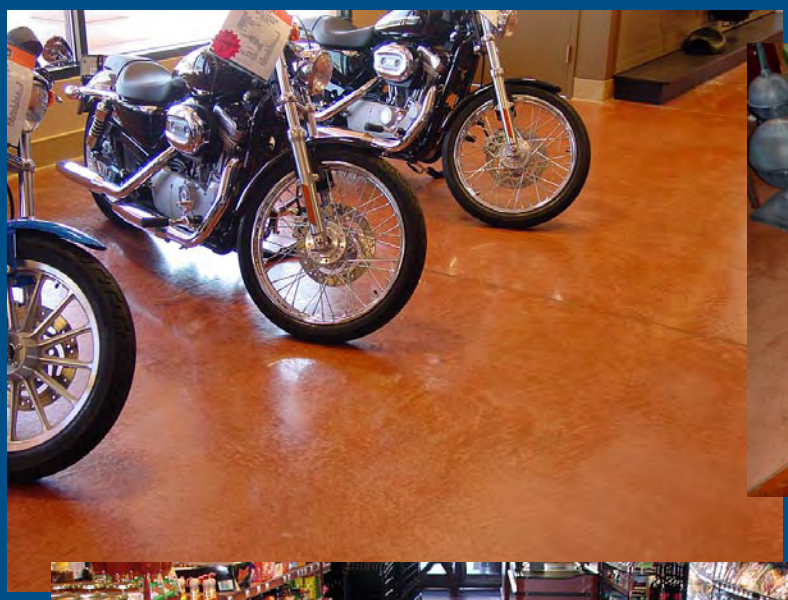
Photos courtesy of Bay Area Concretes Inc.

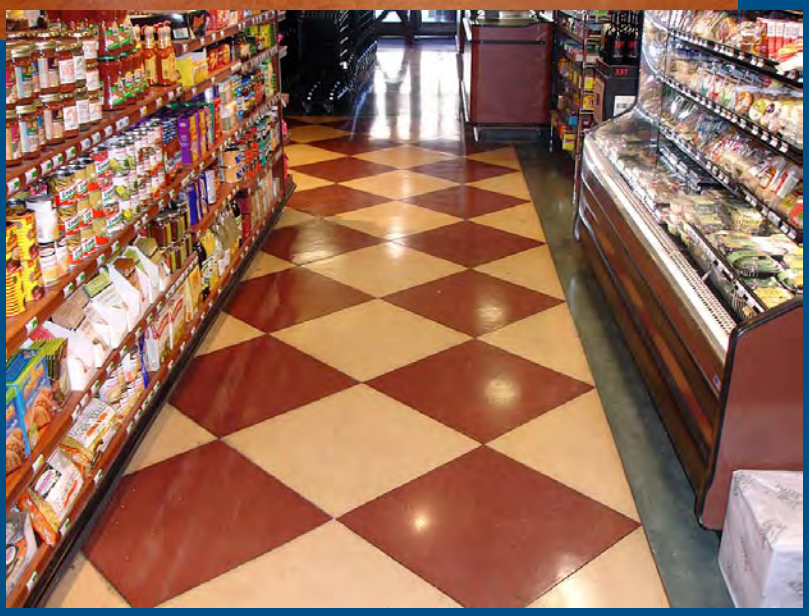
by Natasha Chilingerian

Bay Area Concretes Inc. isn't just the company behind a laundry list of impressive decorative concrete projects around California. As the second contractor to carry Bomanite's stamped concrete products, it claims a piece of decorative concrete history. Company president Michael Price, 44, grew up in the industry and has dedicated his career to beautifying commercial and residential spaces with innovative decorative concrete products and installation techniques — and he plans to continue leading the way.

Founded in 1966 by Price's uncle, Jim Snyder Sr., Bay Area Concretes began as a family-owned lightweight concrete company that installed concrete slabs around San Francisco. In 1970, Price's father, Gary, came on board — the same year the company began offering products manufactured by Bomanite, the originator of colored and imprinted architectural concrete. Today, Bay Area Concretes is the world's oldest existing contractor to have sold and installed Bomanite products.

"I remember seeing (Brad) Bowman, the inventor of stamped concrete, in my backyard when I was a kid," Price says.

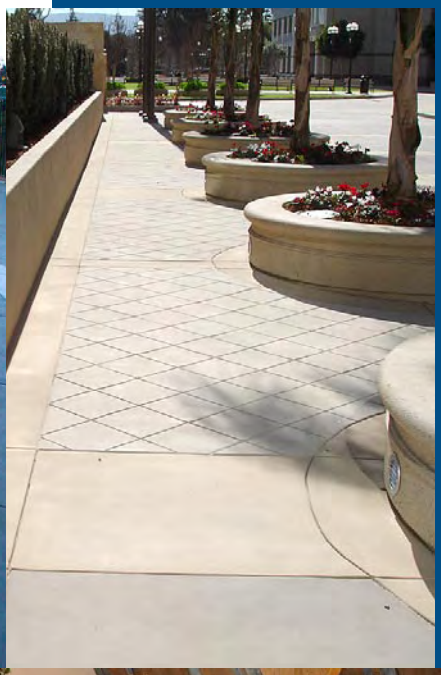




"We were one of the first contractors to sign up for it. Now, everyone is selling stamped concrete."

In the '70s and '80s, the company moved into specialty decorative concrete, working as a subcontractor on projects anchored by other contractors — something that Price says helped spread the word about the company. Price, who holds a financial management degree from Cal Poly State University, began working for his father and uncle in 1983 during his summers off and became a full-time employee in 1990. By the end of that decade, the company had expanded into a full-service commercial and residential site contractor, a decision that Price says was made in order for the company to survive.

Bay Area Concretes currently offers full-service concrete site-work packages, from project conception to installation. The company manufactures its own product lines, Aggretex and PolishedCrete, and it distributes and installs an array of materials by Bomanite, Bomacron, Innotech and Colormaker. It also provides restoration, consultation and concrete construction management services. Serving a client ratio of 60 percent commercial to 40 percent residential, the company's business is comprised of 30 percent plain, gray concrete installation (such as gutters and sidewalks), 40 percent high-end, architectural concrete jobs (which includes patios, countertops, tiles, furniture and floors) and 30 percent artistic interior work (including stained overlays, concrete polishing and detailed interior walls). And the sky's the limit on client types — Bay Area Concretes has beautified federal buildings, public spaces, schools, hospitals, schools, stores and restaurants, just to name a few.



"We do everything you can imagine in concrete," Price says. "But our specialty is decorative concrete toppings, which can be found in our indoor residential work."

Why they're on top

Many of these toppings are born out of Aggretex, Bay Area Concrete's patented installation system of exotic and recycled glass aggregates, which are blended into the wet matrixes of full-thickness concrete slabs for a natural-looking, durable result. Price says architects are especially impressed by the original looks produced by the system. Some materials the company incorporates into concrete surfaces can be surprising, he adds.

"We're not trying to simulate anything," Price says. "Some stamped concrete looks fake, and that may look good in an amusement park, but not at a university. We've done stuff as crazy as using recycled circuit boards, which would have otherwise been in a landfill — something like that could fit into a Discovery Store or a Sony store."

Also giving Bay Area Concretes a quality reputation are its colorful finishes — to achieve vivid hues, color hardeners (by either Aggretex, Innotech or Bomanite) are troweled onto concrete surfaces, resulting in a fade-proof, pliable finish that can be stamped or textured. "Whenever someone wants to integrate color into a finish, they generally come to us," Price says. The company also incorporates technology to create unique floor attributes — for example, electrical cables or a tubing matrix that carries flowing hot water are often embedded in concrete floors so they radiate heat.

What's in demand right now among Bay Area Concretes clients? Price says the Aggretex system is especially popular, since it helps clients achieve

a traditional look that's currently topping the list of decorative concrete trends. "What's hot and new right now is old school finishes, like exposed aggregates," Price says. Jonathan Vasquez, 43, Price's business partner, adds that multidimensional, colored glass aggregates are also in demand right now, as is a look of simplicity. "A refined, clean look seems to be working these days for interiors," Vasquez says.

Transforming the Fillmore

The flagship project in the company's history, according to Price, was the renovation of a 17,000-square-foot plaza at San Francisco's Fillmore Center, for which the company received a first-place award for special finishes in ASCC's 2010 Decorative Concrete Council Awards program, plus a first-place Concrete Pavement Award for commercial decorative flatwork in 2008 from Concrete Products magazine. Working with Terry Lofrano of San Francisco-based Axis Architecture + Design, Bay Area Concretes paved the plaza's grounds and added 12-foot-high walls, a fountain and seating around the plaza's radius, among other features. To add depth and color throughout the plaza, workers poured gray concrete and immediately placed recycled glass aggregates in blue, red, green and clear, plus a green Malaysian rock blend and other exotic rocks, into the mixture. "It was our coolest, most aggressive flatwork," Price says. "It was our most difficult project, and also our prettiest."

While Price says the company felt a slight downturn in 2009, its high-end focus and established name among architects have helped keep the company's business strong. "2007 and 2008 were good years because we had developed relationships with architects," Price says. "Our work is very high-end, and that high-end niche work is always

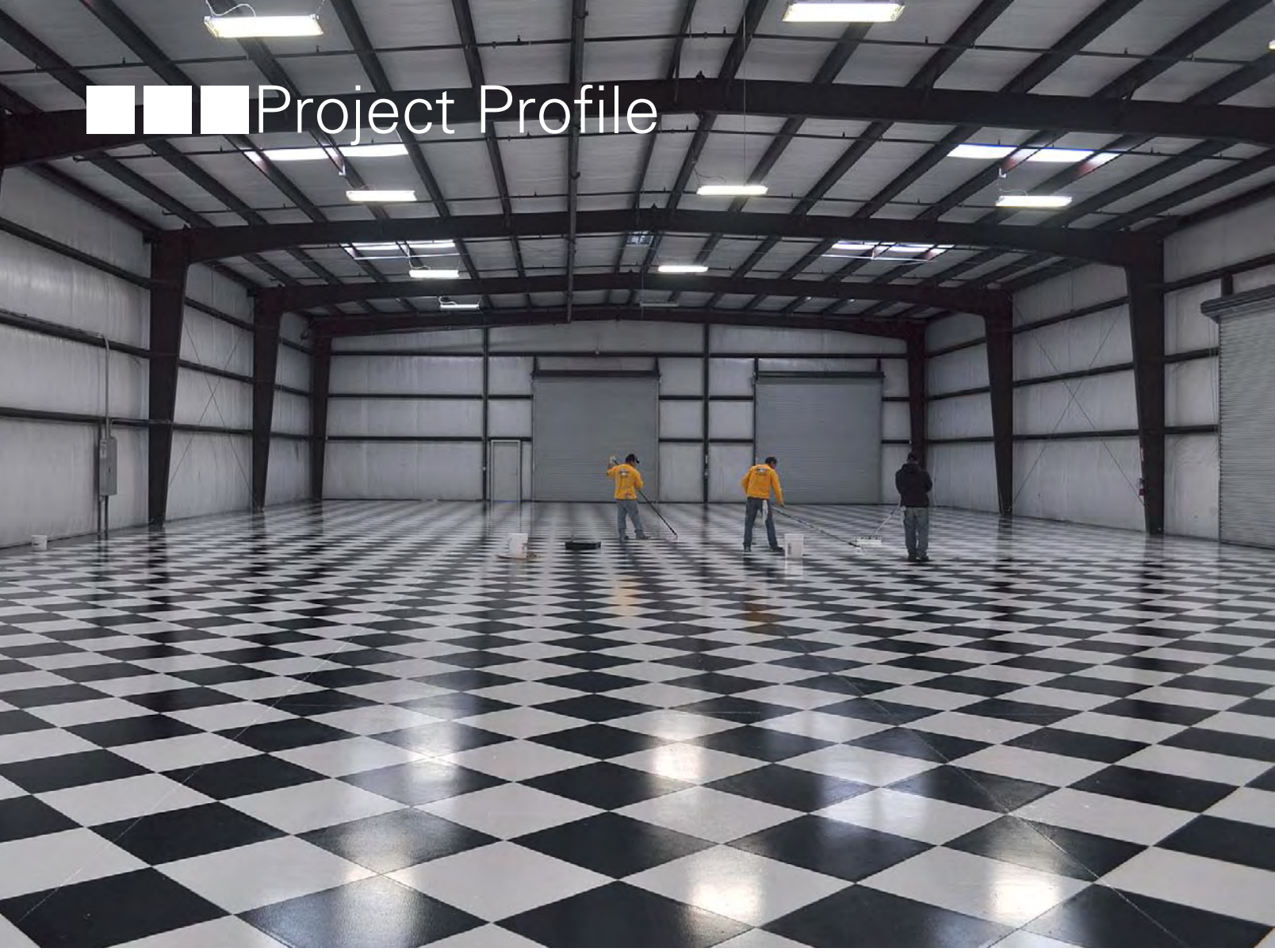
there."

As Bay Area is involved with projects from beginning to end, its employees work with a number of construction industry professionals, including architects, general contractors and interior designers. Varying levels of knowledge often result in communication challenges, but Price says his company's job is to take the creative ideas of others, break down the technicalities of the project, and eventually turn it into stellar decorative concrete work. "We had one interior designer who wanted a maple leaf design in a concrete floor, and we did it," Price says. "We try to let designers and architects have as much expression as we can. They come to us to see what we can do, and we rarely say we can't do it."

Price, Vasquez and their staff have established Bay Area Concretes as a force in the decorative concrete industry, but they aren't done yet. Price hopes to double the company's size in five years and be a step ahead of the competition in decorative concrete innovations. Two projects at the top of his list are to help develop technologies for illuminated concrete — think white sidewalks that can glow in the dark at night — and to continue working in a manner that's friendly to the environment. Vasquez adds that maintaining the highest quality of work, even on basic jobs, is key to the company's continued success.

"We want to always be highly regarded from a quality standpoint," Vasquez says. "We'll take that and put it into our everyday concrete work scope, and make sure that even our simple work is completed with a high level of expertise."

www.bayareaconcretes.com



Photos courtesy of Concrete by Hallack

The Toy Box

Modesto, Calif.
Contractor: Concrete by Hallack

by Stacey Enesey Klemenc

The first thing you'll notice about this private garage in Modesto, Calif., is how incredibly flawless the checkerboard pattern looks.

It looks perfect, says contractor Julio A. Hallack, because it is. He and two of his staff took two days to lay out the pattern in an area that's roughly 130 feet by 80 feet, beginning at the center of the slab and working their way to the perimeters. They got a little help from an engineer hired by the client, but Hallack and his crew did the work. "We took measurements the old way,

Project at a Glance

Contractor: Julio A. Hallack, president and CEO of Concrete by Hallack, Turlock, Calif.

Client: A well-to-do private owner who likes fast cars and sponsors auto racing.

Project description: To convert a machine shop into a private garage for high-end automobiles to preserve their condition and show them to invited guests.

Challenge: Using white and black Miracote Colorbond XL to create a perfect checkerboard pattern with crisp lines and no bleeds.

using a square and a chalk line," says Hallack, president and CEO of Concrete by Hallack in Turlock, Calif.

Each of the 2,400 squares was precisely cut 2 feet on center — no more, no less — using a walk-behind lightweight concrete saw now known as the Husqvarna Soff-Cut 150. "You're only supposed to use this little machine on freshly poured concrete, but we used it on this old concrete just scoring lines 3/8 inch deep, not opening new control joints," Hallack explains.

"We kept our lines straight when we saw-cut by using our experience and knowing what equipment to use," he says. "Concrete blades were changed and replaced for new ones as often as needed. And we used orange chalk powder to mark the floor and prevent color contamination."

Besides experience and proper equipment, Hallack credits the success of this project to borrowing tools and techniques from other trades such as tile installation, painting and janitorial services. He also says it was imperative to have a professional crew who was happy to be on the job and completely focused on getting the job done right.

Prepping the surface

Before the garage, nicknamed "The Toy Box," glistened in its present glory, it was an ordinary 10-year-old machine shop with a machine-troweled, extremely tight surface. The well-to-do private owner of the garage happens to love fast cars and even sponsors auto racing.

The 10,400-square-foot floor — which consisted of your typical gray, high-gloss concrete with appropriate control joints — was covered with curing compound and oil stains.

The first step of the job involved removing all the accumulated debris from the 1,451 feet of existing control joints and vacuuming up the fine dust.

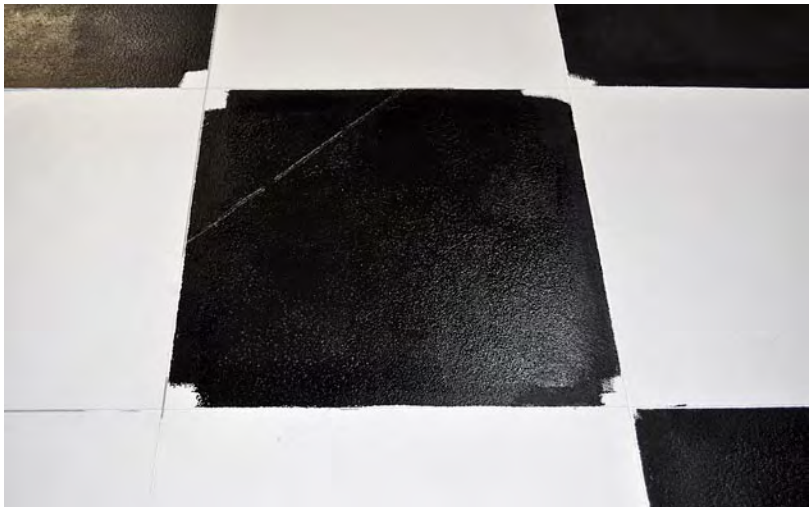
"We then filled in (the control joints) with tile grout using a very slurried mix and let them dry for a day," Hallack says, so that moisture couldn't travel inside the slab during the surface preparation.

The following day, they removed all surface contaminants with strippers, lots of water and a neutralizer. A scrubbing machine with nylon grid brushes was used to remove the oil, grease and the stubborn curing compounds used when the slab was poured.

"By encapsulating (the control joints) ahead of time, we made sure all the water and strippers used to clean the floor stayed on the surface and didn't go inside the concrete slab," Hallack says. "Instead, we could pick them up and get them out of there. This is one of the most important steps contractors should follow and most don't pay attention to. They don't understand what moisture

Each of the 2,400 squares in the project were cut using a machine known today as the Husqvarna Soff-Cut 150 walk-behind concrete saw.

ML Primer, the Miracote product applied for bonding purposes, is reacting after the application. On the left side of the picture the primer is already dry. It will take two to three hours for the right side to dry.



can do. But it can be a nightmare."

The slab, he explains, is composed of a 6-mil plastic underlayment covered with 2 inches of sand and then 6 inches of concrete — "a very common way of placing commercial slabs in California." Eventually, he continues, trapped moisture will come up to the surface, causing delamination of toppings and sealers.

Since the slab was machine-finished, the crew used #60 sandpaper and an economically priced product called Preserva Crete to clean and open the floor for the bonding application. "The cleaner/etcher is comparable to muriatic acid but it doesn't have a smell. It is a green product that doesn't contaminate the environment," Hallack says, adding that he bought it at Home Depot. It's also available from janitorial product distributors, as well as other big box stores.

They hit the floor with a second pass from the scrubbing machine and cleaned it with a concrete neutralizer.

This initial cleanup took a crew of six four days to complete.

Creating the design

Once the floor was cleaned and opened, a four-man crew applied ML Primer by Miracote as the bonding agent. When it was dry, they put down a coat of white Miracote Colorbond XL with 18-inch rollers. "Now the whole floor was white and seamless," Hallack says, noting that Colorbond is a coloring agent and a sealer combined. They let it dry for 24 hours.

Miracote Colorbond XL, a single-component self-crosslinking acrylic finish coating, can be used in new or recoat work. Hallack says he chose the product because of its durability, excellent weathering qualities and ease of use. "Colorbond is an excellent product to use on this kind of application," he says. "Besides being easy to apply, it allows us to create art."

With a clean canvas before them, Hallack and his crew chalked out the checkerboard pattern, a design with natural appeal for auto-racing fans like the owner of The Toy Box. It then took a crew of four two days to saw-cut the design, using the walk-behind saw and 4-inch Makita grinders. They cleaned as they went along.

A six-man crew returned the next day to vacuum up the

remaining dust and clean the surface with water. This cleanup took one day.

Next, a crew of five applied a second coat of white Colorbond with an airless sprayer. "We borrowed this technique from the painting industry," Hallack says. "The first coat was rolled on. The second coat was sprayed on to make sure all the saw-cut lines were colored white. We didn't want any gray concrete to be seen." This took a day too.

"The best and most challenging part was to apply the black Colorbond," Hallack says. For this step, he says, they borrowed many techniques from the painting industry to get the job done right. They also used plenty of its tools, including brushes, trays and rollers. It took a crew of six two days to complete the arduous task.

"We used special brushes to do the borders and then used rollers to paint the insides of the squares," Hallack says. "We had to be extremely meticulous for this part of the job. It was very demanding." He concedes that a few mistakes were made but nothing that a little touch-up Colorbond wouldn't fix.

Hallack says he engages with his employees to make sure they are mentally and physically ready to do this type of task. "I create an environment of relaxation. If someone is not in the right frame of mind, I'll remove them from the job site. I expect my employees to be smiling and happy. When employees are happy, they produce more."

Sealing the deal

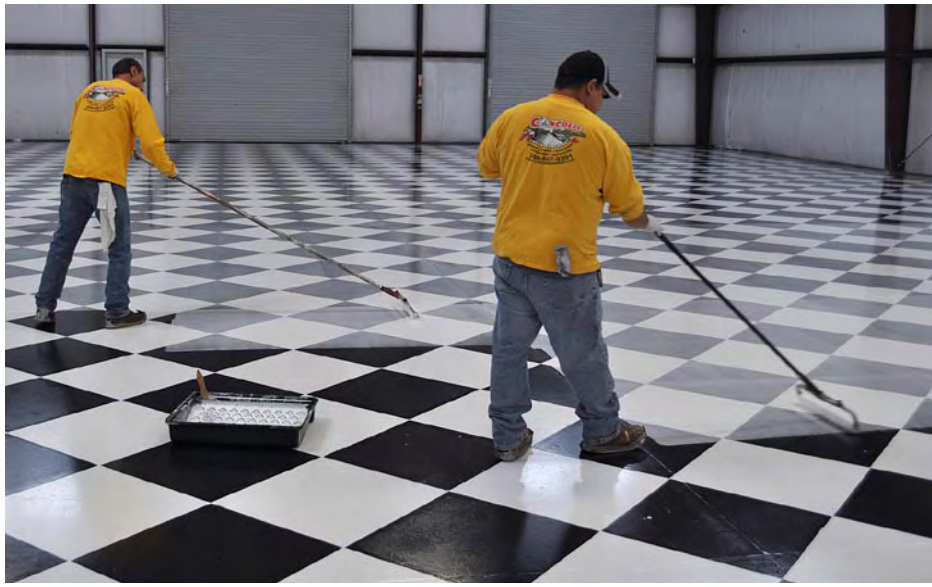
When the painting was completed, Hallack sealed the floor with three coats of Miracote Mirapoxy WB, a two-component, chemically resistant, water-based epoxy floor coating system. Applying the epoxy with 18- and 24-inch rollers took a six-man crew two days to complete.

After the floor was buffed, they applied four coats of floor wax "because the owner wanted to see his face's reflection on the floor," Hallack says. "And he can."

The entire restoration job took Hallack's company 470 staff hours to complete. The cost of materials, blades, strippers, pads and equipment was 75 cents per square foot. The company's cost to do the entire job — including labor and materials — was $2.85 per square foot.

"I like to create unique things and I like to challenge myself," Hallack says. "We have to be creative and pay attention to details and, most importantly, listen to our clients. That's what you have to do in this industry to stay alive."

www.concretebyhallack.com



How Contractors Handle Maintenance

Photo courtesy of Variegate Concrete Concepts

Craig Cowan of Variegate Concrete Concepts, in Lakewood, Colo., applied a solvenated acrylic sealer to protect this overlay, which was textured and colored to look like antique brick. He'll make sure the color stays fresh by revisiting and inspecting the project after one year under warranty.

by Amy Johnson

Maintenance. It's the thorn in the lion's paw, the fly in the ointment, the missing horseshoe nail that brings down the whole cavalry. Time and time again, concrete artisans see their work diminished, aged prematurely or even ruined because it was not properly maintained.

Incorrect maintenance often gravitates to one extreme or the other. Either the surface is neglected or it is cleaned too aggressively.

So what can contractors do to improve the chances that their work will continue to look beautiful even when they are not there to protect it themselves?

Sealing

The first step toward proper maintenance comes before the job is even finished. That first step is choosing and applying the best possible sealer. "The right system at the front end saves cost and maintenance in the end," says Shellie Rigsby, owner of Acanthus Inc., based in Plano, Texas. "Choose the right system, not the cheapest system. Choose one that can be maintained and to be sure it is, include maintenance instructions when you turn it over to the owners."

Many contractors with maintenance in mind like using a solvenated acrylic sealer for outdoor installations because the material is easy to reseal. "The solvent re-emulsifies the acrylic so you don't build up layers that could flake or peel — you have one cohesive coat of sealer," explains Craig Cowan, owner of Variegate Concrete Concepts in Lakewood, Colo.

Photo courtesy of CK Concrete Design

CK Concrete Design of St. Louis gives clients written instructions that say how to avoid damaging curing countertops, plus how to clean and protect them.

A good solvent-based acrylic will last longer than a cure-and-seal product, adds Mac Gordon, owner and general manager of Concrete Solutions Plus, Louisville, Colo. "Cure-and-seals are essential to start with, but resealing should be done with a high-quality acrylic sealer."

For interiors, Cowan uses the highest quality sealer he can — urethane, epoxy or polyaspartic — and then topcoats that with a protective layer of wax. He likes wax because it is cheap and easy for customers to strip and reapply. Even with a wax topcoat, Cowan still insists on a high-performance, low-maintenance sealer. "If people are going to neglect it, at least it will last longer," he says.

Countertop sealers continue to be a topic of much interest, with nearly as many opinions as there are contractors. Whatever the reasons for choosing a countertop sealer, that choice will dictate the maintenance and resealing requirements.

Because the sealer is what comes between the concrete and the traffic and spills, what looks like a dull or faded surface is often just a scratched, worn sealer, and not damaged concrete. Preventing scratches, cleaning properly and resealing when necessary will keep decorative concrete looking its best.

Teach good housekeeping

Homeowners can keep floors and counters looking nice longer by avoiding risky behaviors. Chris Klipfel, of CK Concrete Design in St. Louis, Mo., remembers one customer who tried to remove a wine stain from a shirt by soaking it in a bleach solution and laying it out on a jet-black concrete countertop to dry. "The outline of that shirt right down to the collar was etched onto that concrete," he says. Bathroom counters are vulnerable to stains from hair dye, which is highly alkaline, or to scorches from hot hair-care appliances. More examples of abuse are scratches caused by sliding rough bottles, unglazed ceramics or boxes brought in from the garage across a counter or floor.

Aside from avoiding such extreme abuse, there are some simple measures homeowners can take to preserve their decorative concrete. Klipfel suggests setting a wine bottle on a towel before opening it to avoid scratching a counter. "People who take off their shoes inside the house are people I love," says Cowan. He also recommends placing mats on concrete floors just outside and inside doors and lifting and placing furniture rather than dragging it. "Treat decorative concrete floors as you would hardwood and they'll last a lifetime."

Best cleaning practices start with the least aggressive methods first — sweeping or vacuuming floors and cleaning floors or counters with a damp cloth and water. If something stronger is needed to remove a stain or spill, contractors recommend mild, nonacidic cleaners like ammonia or dish soap without citrus. Products labeled "green" are usually a good choice, but Tommy

Cook, decorative concrete consultant with Seattle-based CM Services, strongly advises that users check the labels. He once traced the cause of a blistered acrylic sealer to a cleaner that contained tea-tree oil. "If it says 'Do not use on acrylic,' don't use it on concrete sealed with acrylic sealer," he warns. Abrasive cleaners have the potential to scratch.

CK Concrete gets the attention of their residential customers, most of whom are women, by pampering them. The company packages cleaning supplies and care instructions in a gift basket that includes a bottle of green cleaner, a soft microfiber cleaning cloth and sticky felt pads to attach to serving pieces or appliances that will slide around on the counter. Cowan gives each customer a personalized set of maintenance instructions and advice tailored to that specific project.

Presenting a program

Often the best way for contractors to ensure that their work is properly maintained is to do it themselves. One solution is to offer a regular inspection and maintenance program. For example, Concrete Solutions Plus recently took on a five-year maintenance program with the homeowners' association of a residential development. They will clean, touch up and reseal a large penthouse patio as needed. "We also do the resealing of all decorative concrete and gray overlays at this development every three years, but that is just arranged, not contracted," Gordon says.

Gordon determines the price for an offering like the patio program by the square foot — usually between $1.50 and $2, depending on the size.

Variegate Concrete Concepts offers an 18-month warranty on its concrete floors. They inspect after one year, and if the floor needs to be resealed, they do it under warranty. After the warranty is up, they call the customer every year and offer a free inspection. This encourages the homeowner to keep on top of maintenance and reseal before the surface is damaged.

Rigsby offers her customers their first maintenance application free. After the floor is installed, after all the construction is finished, after the construction crew completes their cleanup, she comes back to the site and applies the final floor finish. Any sooner than that and she risks having the finish damaged to the point that it has to be stripped and reapplied. The best scenario is to perform this first application with the homeowner or maintenance crew watching so they actually see how to do it properly.

Rigsby recommends owners inspect their floors every six months. "They

Maintaining a Maintenance Program: One Contractor's Story

by Chris Becker

When I started my business, I knew that my core work would come from colored and stamped exterior paving, interior colored concrete flooring, and concrete countertops, as well as some decorative restoration work. After the first year, by April 2003, I was already getting calls from a few clients asking if I would come out and take a look at the work that I did the prior year. At first, I viewed these calls as a nuisance, and was concerned that they would eat up a lot of my valuable time ... so I was not open to the possibilities that were unfolding.

In some cases, people were in fact looking to get a free application of sealer on their driveway, or a buff and wax on an interior floor within the warranty period of our work. However most were just interested in protecting the investment that they made, and wanted our help to ensure that the right products and procedures were in place, which put my company in a perfect position to capture an ongoing annuity from each job that we were installing.

Today, we include maintenance programs right in with our bids for new work, tailored to the application and client. This allows the client to know up front what we suggest for the product that we have created for them. This is great information for commercial clients that need to understand life-cycle cost and annual budgets.

To make all of this work financially, we start early in March setting up schedules for our exterior projects. We schedule maintenance in ways that are the most efficient for our crews based on gaps in their workloads and location within our market. Our clients generally agree to a framework of time instead of scheduling a specific day, so this work does not get in the way of our core business. I learned early on that it could be a real mess to have to pull a valuable technician from a large pour to go out and wash and seal a patio, so having flexibility with our customers and our schedule is very important.

In the winter months, we actively look for interior floor and countertop projects, to provide any type of maintenance work that may be needed. The toughest jobs for us are commercial spaces like grocery stores, where we may have to work at night, or restaurants where the logistics of getting in and moving tables and chairs to just get at the work becomes a challenge.

In summary, I think that maintenance work can be a great source of revenue if you take charge of how you offer and perform the work. A great side benefit is that it really helps our projects look great over time, which is huge for referrals and new prospects that want to see our work.

www.beckerconcrete.com

Chris Becker is president of Becker Architectural Concrete Inc., based in Woodbury, Minn. He may be reached at (651) 554-0346.

can tell when a sealer is not at its prime," she says. "It looks like it doesn't have any sealer on it." When it reaches that point, or when the color seems faded, she recommends they reseal.

Cowan says homeowners can reseal themselves. However, he warns, they are likely to overapply the material. "It's like painting your house," he says. "You can have a do-it-yourself paint job or a professional paint job. For a high-quality look, I say always go professional." He also believes contractors generally have access to higher-grade materials than homeowners do.

No matter how owners clean and maintain decorative concrete, the point is that they must be convinced that it needs taking care of. "Yes, concrete is some of the strongest stuff out there," says Cowan, "but nothing in this world is maintenance-free."

Rigsby agrees. "We groom beaches, we mow grass," she says. "Everything's in a constant state of change." And the best way to counter the negative impact of that constant change on decorative concrete is to keep it clean and well-maintained.

www.ckconcretedesign.com
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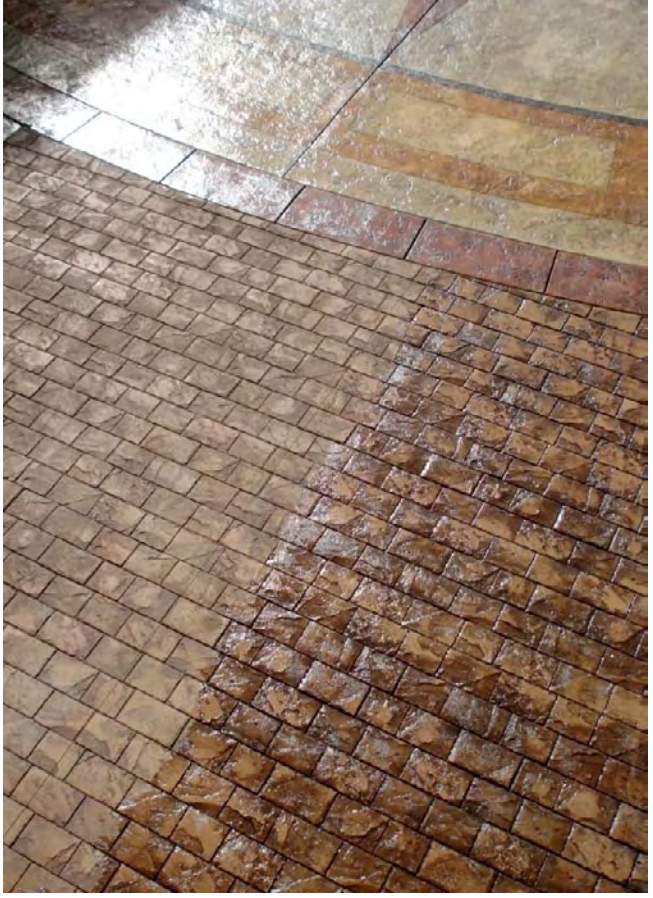
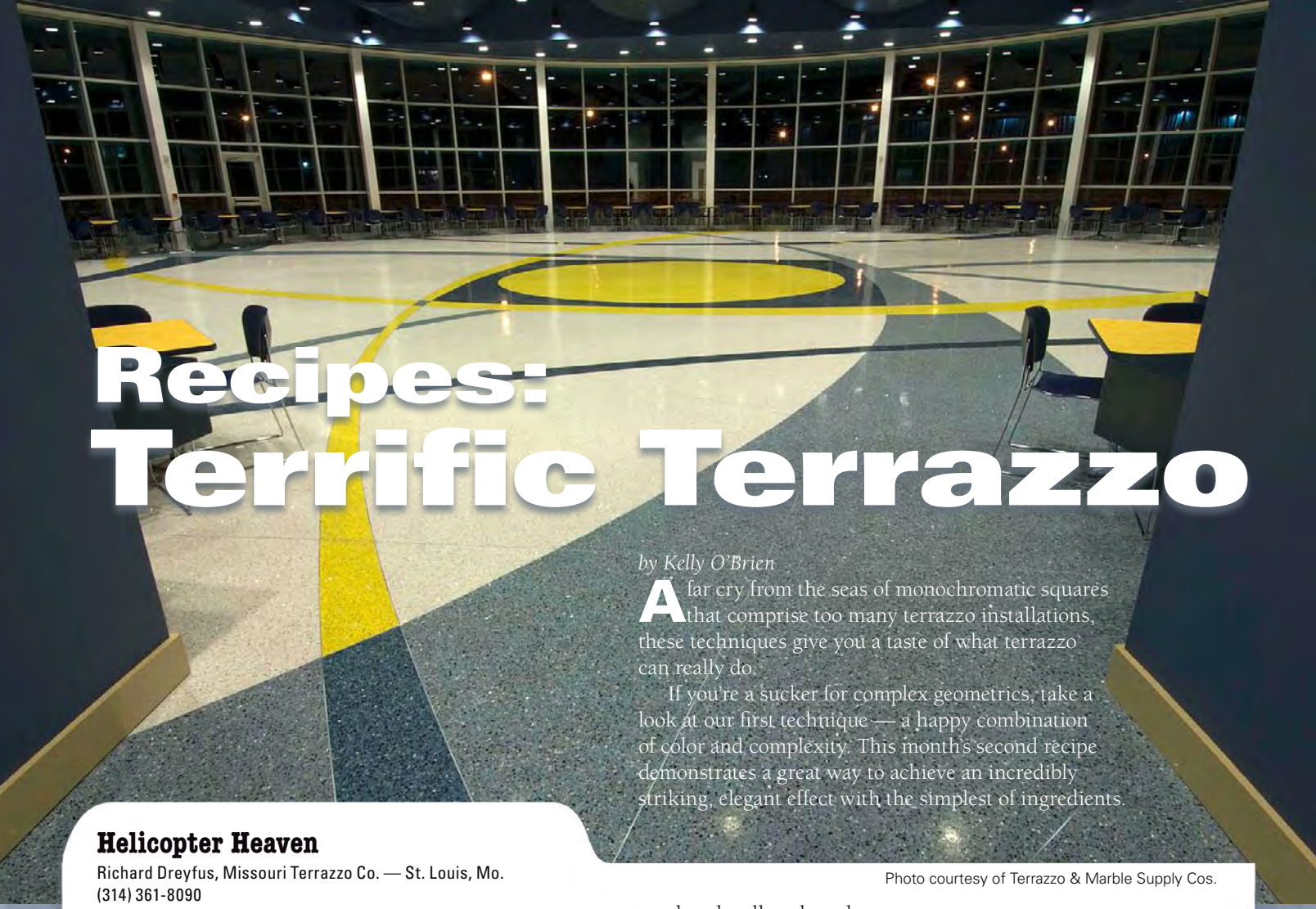


Photo courtesy of Andre Plouffe, Designs in Concrete

Sealer applied at the Orsini complex, a series of high-end luxury condominiums in downtown Los Angeles. Selecting and regularly reapplying a sealer can be an important part of ongoing maintenance.



Recipes: Terrific Terrazzo

by Kelly O'Brien

A far cry from the seas of monochromatic squares that comprise too many terrazzo installations, these techniques give you a taste of what terrazzo can really do.

If you're a sucker for complex geometrics, take a look at our first technique — a happy combination of color and complexity. This month's second recipe demonstrates a great way to achieve an incredibly striking, elegant effect with the simplest of ingredients.

Photo courtesy of Terrazzo & Marble Supply Cos.

Helicopter Heaven

Richard Dreyfus, Missouri Terrazzo Co. — St. Louis, Mo.
(314) 361-8090

Inspired by the rotors of the helicopters the client manufactures, this intricate, precise design shows off not only the contractor's technical aptitude but also terrazzo's design versatility.

Ingredients:

Terrazzo & Marble Supply Terroxy Iso-Crack Epoxy Membrane
Fiberglass scrim material (to use in case of cracks in the substrate)
T&M Supply Terroxy Primer
T&M Supply Signature Divider Strips (3/8 inch by 1/8 inch)
T&M Supply Terroxy Resin Matrix
T&M Supply Terroxy pigments: Dizzle Yellow, Sun Valley, Mayan, Navy Wool
Cactus Canyon Quarries marble chips
Heritage Glass recycled glass aggregate
T&M Supply recycled one-sided mirror glass aggregate
Sherwin-Williams Terrazzo ATF 20 Filler
T&M Supply Terroxy Water-Based Acrylic Sealer
Special equipment used: Blastrac shotblaster with 390 shot, AutoCAD computer software, laserjet cutter, hot glue gun or epoxy adhesive, Terrco Model 2000 floor grinder with 40-, 80-, 100-, 200- and 400-grit diamond discs

Directions:

- Design your pattern in AutoCAD and, using a laserjet cutter, cut out full-size cardboard templates for each element.
- At the site, prep your surface by shotblasting and grinding to get a smooth, flat profile to ensure the epoxy will bond well to the substrate.
- Fill any exposed cracks with small, unpigmented amounts of Terroxy Resin Matrix. Then create a patch by covering the filled cracks with the Terroxy Iso-Crack Epoxy Membrane and a scrim.
- Using the cardboard templates, lay out your design on the surface and trace the edges of each element. Remove the templates and, using hot glue and epoxy adhesive, affix your divider strips to the lines of the design.
- Put down a coat of Terroxy Primer over the entire area to ensure a proper bond.
- Mix your batches of the Terroxy Resin Matrix, one batch for each pigment. Each batch gets 180 pounds of aggregate — 75 percent marble chips, 15 percent recycled glass and 10 percent recycled mirror — plus a small amount of ATF 20 Filler.
- Fill in the pattern with the appropriate colors according to your design, and let it set completely.
- With your floor grinder, do multiple dry passes, first with 40-grit diamonds and then with 80-grit.
- After this is completed, grout the entire floor using the appropriate colors of epoxy matrix and let it set.
- Use the grinder to remove excess grout and polish the surface. Do several runs of wet grinding, first with 100-grit diamonds, then 200-grit and then 400-grit for the finish.
- Clean the surface thoroughly and seal the floor with the Terroxy sealer.

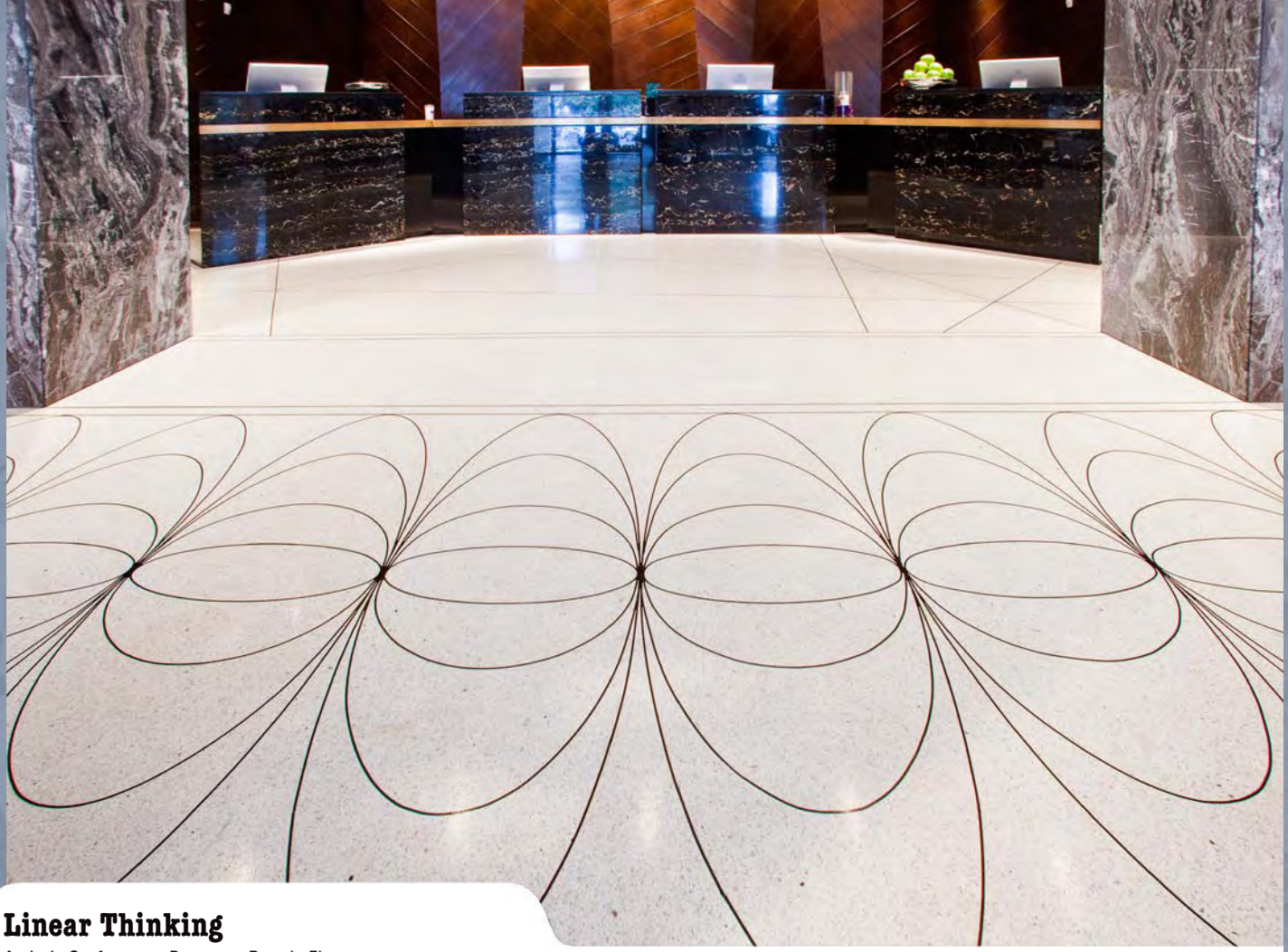


Photo courtesy of Artistic Surfaces

Linear Thinking

Artistic Surfaces — Pompano Beach, Fla.
www.artisticsurfaces.com

For an upscale hotel like the W in Miami Beach, elegance is anything but optional. This effect, using incredibly simple ingredients, provides a deliciously luxe look for the lobby.

Ingredients

Dry-pack mudbed:
Key Resin Moisture Vapor Treatment #635
Cement-IT Western White portland cement
Klein and Co. Plex-A-Bond acrylic additive
Coarse sand
Key Resin Epoxy Terrazzo #108, white
Manhattan American Terrazzo Strip plastic divider strips (3/8 inch by 1/8 inch), black
Continental Terrazzo Supply marble chips, China White in size 0 and 1
Burnett Athletics Plus 5 Field Marker white marble dust
Johnson Wax Professional Plaza Plus sealer
Special equipment used: Water-jet cutter, Blastrac 1-15DS Global shotblaster with S-460 steel shot, paint roller with at least a 1/2-inch nap, Terrco Model 3100-3P floor grinder, 24-grit diamond segments, 80-grit and 120-grit carbide stones

Directions

- As this recipe is simple black and white, it works best when creating line art. Using a water-jet cutter, cut out a set of full-size templates for your design.
- Shotblast the floor with Blastrac 1-15DS and S-460 steel shot to open the surface of the concrete.
- Clean floor thoroughly with a vacuum.
- Mix the Moisture Vapor Treatment and put down one coat of the product with a paint roller.
- Mix the dry-pack mudbed using the portland cement, coarse sand and Plex-A-Bond, at a ratio of 4 parts portland cement to 1 part each of sand and Plex-A-Bond. Screed the mixture to the proper elevation.
- Trace design on the mudbed using your template, and then affix your divider strips along the lines of the pattern.
- Mix Key Resin Epoxy, which comes as a two-part system, at a 5:1 epoxy-to-hardener ratio, and mix for 5 minutes.
- Add 25 pounds of Plus 5 as filler to help stiffen the epoxy mix. Let mix for 2 minutes.
- Add a batch of chips — half of them size 0 and half size 1 — and let mix for 3 more minutes. Pour mix on the floor and spread with a hand trowel.
- Let cure for 10 hours before beginning grinding and polishing.
- Start with a rough grind (dry or wet) using the 24-grit diamond segments. Make sure to make an even number of passes so the floor will be even and flat.
- Next, a medium grind with 80-grit carbide stones.
- Finally, a fine grind with 120-grit carbide stones.
- Mop the floor with clean water after the fine grind. Rinse and repeat a couple of times.
- Allow the surface to dry for 4 hours before applying a coat of sealer with a paint roller.

Photo courtesy of Buddy Rhodes Studio

Retail Spaces

by Emily Dixon

Pottery Barns, Nationwide

Contractor: Buddy Rhodes Studio

During the heyday of expansion for the Pottery Barn retail chain, Buddy Rhodes Studio was responsible for providing a number of concrete elements for the stores.

Working at a total of 150 Pottery Barns during the late 1990s and early 2000s, Buddy Rhodes created concrete storefronts, cash counters, vanity tops, floor tiles and fireplace surrounds for locations around the country. Each item was made in pieces in the fabricator's San Francisco headquarters and shipped to the local builders.

"We'd make blueprints, number each piece on the blueprint and number the pieces themselves," says president Buddy Rhodes. "It was like a build-by-number."

The pieces were typically cast over foam to give the illusion of a thick piece of concrete, when in reality each was only 1 inch thick. The lower weight made shipping easier.

Although Pottery Barn is now using limestone in new stores rather than concrete, the chain's relationship with Buddy Rhodes hasn't ended. The fabricator refurbishes any necessary elements for its 150 stores and produces pieces for expansions of those stores.

Most often, it's the cash counters that need a facelift. "We put a microtopping over the top of the cash wraps," says Rhodes. "We'll go in when the stores close and rough up the surface and retrowel a skim coat over the top and reseal with our own products."

www.buddyrhodes.com

Photos courtesy of Westcoat Specialty Coating Systems

Seabreeze Café, Oceanside, Calif.

Contractor: Life Deck Coating Installations

When the Wyndham Oceanside Pier Resort in Oceanside, Calif., wanted an ocean blue floor for its Seabreeze Café and gift shop, decorative epoxy was a natural solution.

Working with the general contractor, San Diego-based Life Deck Coatings Installations was hired for the job.

"It really does look like the ocean," says Life Deck project manager Gil Koury, noting that the Pacific Ocean is just 100 yards away.

Life Deck began the project by scarifying the surface and patching cracks with EC-72 Epoxy Patch Gel from Westcoat Specialty Coating Systems. Next the floor was given an epoxy-primer coat of EC-12, also from Westcoat. To create the ocean blue color, Life Deck applied a custom shade of Westcoat's Liquid Dazzle, a 100-percent solids epoxy floor coating system that produces a dynamic color-changing floor with its metallic additives. To finish the floor, EC-95 Polyurethane Topcoat was installed.

Just as the project was about to wrap up, Wyndham decided they wanted to add images of sea creatures to the ocean floor. Life Deck hired local artist Shauna Decker to do the work. Using EC-11 Water-Based Epoxy in custom colors, Decker painted on images of starfish, octopuses and turtles.

"She took our epoxy and really made it come to life," says Koury.

www.lifedeck.com

Photos courtesy of CK Concrete Design

Rachel Roy Concrete Mannequin Bases for Macy's Stores, Nationwide

Contractor: CK Concrete Design

When prominent fashion designer Rachel Roy needed concrete mannequin bases to go into Macy's department stores across the country, retail fixtures leader IDX Corp. called on Chris Klipfel, at CK Concrete Design in St. Louis, Mo., to help.

In total, 250 concrete bases were needed to support mannequins that would show off Roy's clothing line in the Macy's stores. The bases would match the 100-year-old concrete floor in her Manhattan studio.

Klipfel and his crew created the pieces in two different runs. Each batch required 125 bases to be made in just three weeks.

In order to mass-produce the bases, Klipfel had to hire two additional employees and temporarily revamp his shop to meet the demand. "Our 5,000-square-foot shop was completely broken down and redesigned to handle production, finishing, storage and shipping," he says. "Producing the pieces was pretty easy. We had a pretty basic system in place."

Each base measures 4 inches by 36 inches by 72 inches.

Klipfel and his crew cast each piece around 3-inch foam to keep them light enough for Macy's employees to easily move around, and they reinforced the pieces with PVA fiber. The pieces were then given a rough hand-troweling, lightly polished to bring out the aggregate, and lightly treated with a highly diluted black water-based dye from Legacy Decorative Concrete Systems to create a translucent look.

"The black dye was used to highlight and provide light color shifts from black to smoky grey hues throughout the surface," Klipfel says.

Finally, they were sealed with a polyaspartic polyurea from Flexmar Coatings LLC.

Roy and IDX wanted the bases to be reminiscent of a worn, old concrete floor. "This was not a normal finished piece of concrete," Klipfel says. "She (Roy) didn't want perfection. It has visible trowel marks, the finish is dotted with exposed aggregate and it has bug holes. It's the most intentionally unrefined concrete I've ever produced. It was like the worse it got, they more they liked it."

Once all the bases were assembled, they were sent to a metal fabricator in St. Louis to be fitted with wheels and parts for the mannequins. Then they were shipped to cities that have Macy's stores.

Although making 250 concrete mannequin bases could have been a challenge, the project went smoothly, in part because of IDX, the retail fixtures company.

"IDX is probably one of the best clients we've ever worked with as far as how they do things, the order in which they do them, and in terms of making tight decisions like final coloring," Klipfel says. "They are fantastic at taking care of all the details."

www.ckconcretedesign.com

Photos courtesy of Mark Beamish Waterproofing Inc.

Fresh & Easy Neighborhood Markets, California and Arizona

Contractor: Mark Beamish Waterproofing Inc.

When Fresh & Easy Neighborhood Market Inc. started building in Southern California, several general contractors asked the grocery store chain's design team to consider Mark Beamish Waterproofing Inc. as an approved vendor for polished floors in new locations.

"They thought Fresh & Easy would be really satisfied with our work," says Mark Beamish president Adam Beamish.

As it turns out, the general contractors were right. Mark Beamish Waterproofing has now worked on 50 Fresh & Easy floors in the Western region, mostly in Southern California but also in Northern California and Arizona.

For each store, Beamish and project manager Matt Hess conduct a preconstruction meeting to address imperfections in the concrete or any other concerns.

"As we've begun to perfect the process we're finding that communication upfront is key for setting expectations," says Beamish. "If we have one bad floor, we're out. We point out some areas that may show some slight imperfections, and make everybody aware of everything."

The size of each store ranges from 13,000 square feet to 15,000 square feet, which includes the sales floor and back rooms. The sales floor is polished and stained, while the back areas are only treated with a sealer. Mark Beamish is given approximately seven days to complete each store.

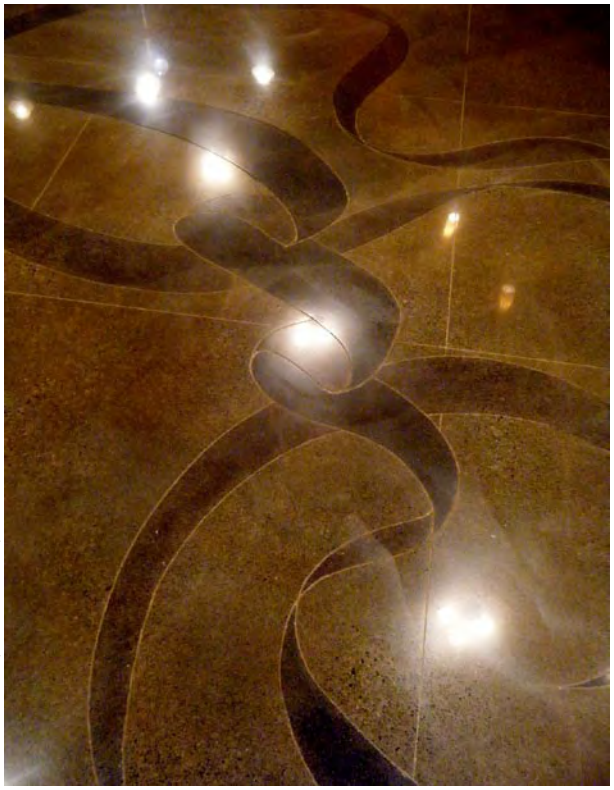
They begin by polishing the floor with a 50-grit resin pad, then 100-grit and 200-grit pads. Next they apply Stain-Crete from Increte Systems in Amber, a custom color designed for Fresh & Easy. After the stain application, RetroPlate 99 is added to the floor as the hardener and sealer. To finish, the floor is given a 400-grit polish, treated with RetroGuard and burnished to a high shine.

Joints are filled with Spal-Pro RS 88, a polyurea manufactured by Metzger/McGuire in a Mocha color that, again, was developed for Fresh & Easy. "The color matches the stain exactly," says Beamish. "That's something we pay particular attention to."

Many of the Fresh & Easy floors in the beginning of the relationship were simply polished gray concrete, but as the grocery store chain evolved, color came into the picture. "The newer stores are going with a stained and polished look for the sales floor," says Hess.

In addition, many of the floors were remodels at the beginning. Now new concrete is poured for nearly every store. "The thing that has made it easier for us is that Fresh & Easy and the general contractors have come to understand the process, and the expectations are clear now," says Beamish. "They know what it takes to have it ready for us to get in there and do the best floor possible."

www.markbeamish.com



Photos courtesy of The Stamp Store

SS DYE-namic
from The Stamp Store

by Sue Marquette Poremba

Traditionally, dyes weren't UV-stable and, therefore, could only be used on interior applications. No longer.

SS DYE-namic from The Stamp Store helps bring dyes into the 21st century.

This UV-stable, acetone-based liquid dye was developed for both interior and exterior use. It is composed of solid-ground color particles in a solution, so it is designed to penetrate open concrete surfaces, including polished surfaces, according to Tim Frazier, a seminar trainer from The Stamp Store in Oklahoma City.

What makes this dye different is its unique proprietary formulation, which is what make it UV-stable. Also, it comes as a liquid, so it mixes and is ready for use quickly.

SS DYE-namic can be used with almost any type of sealer. Because of the acetone base, DYE-namic doesn't leave a lot of residue. "You can seal right after the application," Frazier says. "It has a high flash point and dries immediately."

The product can be used as a wash — incorporating the dye into sealer — which allows users to do one application instead of two, saving both money and time.

Also, mottling agents can be used to achieve distinctive appearances. Frazier always recommends testing and getting samples prior to application.

DYE-namic, which was selected as Editor's Choice-Decorative by the Most Innovative Products award program at the 2010 World of Concrete, can make a good replacement for acid staining. Frazier notes that even after concrete gets to a point where it no longer accepts an acid stain, DYE-namic can still be applied on top of the stain.

The dye has been well-tested by staff at The Stamp Store and outsourced

to others. “In my tests alone, two years prior to it being brought out, I haven’t had any blushing or fading,” says Frazier. “It’s the only dye I’ve used that hasn’t faded outdoors.”

The product has only been on the market since 2009, but Oklahoma City contractor Josh Cunningham of Artistic Stone Surfaces is already a big fan. He started to use DYE-namic because of the problems with acid stains that he has encountered over the years.

“I did a lot of work for a landscape architect that included a number of add-ons to patios, as well as add-on stamp work,” says Cunningham. “We used the DYE-namic on the patios to get a uniform color. That way we won’t get two pads of different colors.”

He also likes to mix the DYE-namic with solvent-based sealers for touch-ups on acid-stained concrete. Cunningham has even antiqued with the dye.

There are 23 colors of DYE-namic, including primary colors, that can be mixed into virtually any color for any project. It comes in quart, gallon and five-gallon sizes.

“Overall, it’s like just about any other dye out there,” says Frazier, “except you can use it outdoors as well as indoors.”

www.thestampstore.com

Floats

By Chris Mayo

Sometimes the most basic steps in completing a successful concrete pour are overlooked or minimized. When your goal is a floor with vibrant color, a polished slab that draws the eye or even a perfectly finished sidewalk, floating is one of those steps that get you to that point.

Floating has to be done on virtually every concrete job after concrete is poured and leveled. (Leveling is usually accomplished with a screed.) Done properly, floating pushes the aggregate down into the concrete and encourages moisture to rise, helping the concrete dry and creating a smoother surface. This is really the first step in the finishing process, and it requires a deft touch and the right tool.

"Some floats seal the concrete while others tend to liven it up," says Mike Schirmer, president of Czar Weld Tools. "If you're adding color, for instance, you want concrete that's receptive to receiving the color. As a general rule mag (magnesium) and aluminum floats tend to seal, while wood and resin floats tend to open or bring more paste to the surface of concrete."

There are floats available for virtually any application, big or small. Bull floats and screed floats are designed for large flatwork jobs, while hand floats are generally used for smaller jobs and touching up the edges and hard-to-reach areas of large pours.

Bull Floats

Bull floats allow the operator to reach far out onto a slab without having to get on the concrete with knee boards. Bull floats consist of a long handle attached to a wood, resin, aluminum or magnesium float. The handle can measure anywhere from 4 feet to 16 feet long. Handles either snap onto the float or are threaded on. A bracket assembly allows the angle to be adjusted to different positions so that the float can reach the concrete surface at the angle needed for the job. The floats are available in many different lengths and widths. They are designed with square or rounded edges and the choice of which to use is usually a function of user preference.

Screed Floats

Screed floats are designed as a two-in-one application for large concrete pours. Screed floats typically feature a float attached to a motor with handles. Attachments are offered in a variety of sizes and materials. Magnesium options offer a way to essentially screed and float in one step — as the concrete is placed, the operator pulls the float along the surface of the material (screeding) and the magnesium blade leaves a smooth (floated) surface.

Magnesium and Aluminum Hand Floats

"The mag float is the staple of the

industry," says Trish Redus, sales manager with Goldblatt Tool Co. LLC. A mag float is simply a flat piece of magnesium or aluminum attached to a handle. The tool allows the user to float concrete at his or her desired pressure and angle. Mag floats are available in a wide range of lengths and widths. Handles are increasingly being designed with user comfort in mind — a variety of options are available in regard to handle shape, size, and hardness or softness. Manufacturers also offer an assortment of handle positions on floats (with the handle attached farther forward or back on the float).

Wood Hand Floats

Every concrete contractor should have a wood float in his or her toolbox. Wood floats are made of hardwood (mahogany or teak, for example) to resist wear and warping. Like mag floats, wood floats are available in an assortment of widths and lengths with a variety of handles of various designs attached in any number of places. Wood floats are particularly useful in those stressful instances in which concrete is setting up too quickly. Wood floats rough up the surface of concrete more than does magnesium, almost forcing moisture to the surface while opening the surface up (or increasing porosity) for surface applications of color, hardener, etc.

Resin Hand Floats

Resin floats were designed as a more resilient and wear-resistant alternative to wood floats. Resin floats perform virtually the same as wood floats, i.e., roughing the surface more than magnesium, drawing additional moisture to the surface, and opening up the concrete for surface applications. While some contractors continue to prefer wood floats, the choice between wood and resin seems to be a matter of taste.

Hand Darbies

Hand darbies are much like mag, wood, or resin floats, except they are longer, often tapered (wider at the tail end, narrower at the head) and they feature either two handles or a handle and a dowel, allowing the operator to utilize both hands. With a darby, the user can extend his or her reach onto the concrete surface and can also apply more pressure when needed (for instance, when concrete is setting too quickly or in applications that call for a stiff slump). Some darbies feature fixed handles, while others have adjustable handles.

Bull Floats

Kraft Tool Co. — Laminated Canvas-Resin Bull Float

Kraft Tool Co.'s Laminated Canvas-Resin Hand Float is a particularly good choice for decorative concrete applications.

- Blade has rounded corners to reduce float marks.
- Face is sanded and broken in for just the right feel for finishers.
- The float's 3/8-inch-thick canvas resin material is long-wearing and does not seal the surface, which aids the decorative coloring process.
- Heavy-gauge C channel keeps the float rigid for even wear.
- Fitted with the exclusive EZY-Tilt II adjustable bracket.

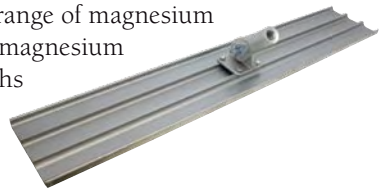
✆ **(800) 422-2448**

www.KraftTool.com

Marshalltown Co. — Bull Floats

Magnesium Bull Floats

Marshalltown offers a wide range of magnesium bull floats, all made of extruded magnesium and available in a variety of widths and lengths.



One example is the 48-inch-by-8-inch magnesium bull float:

- Made from the finest extruded magnesium available.
- Lightweight, long-wearing and properly balanced.

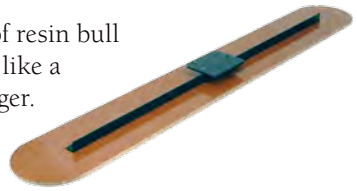
Laminated Wood Bull Floats

Marshalltown offers wood bull floats in three lengths: 36 inches, 48 inches and 60 inches. Each of the three are made of laminated poplar.

- Tapered from 1 1/4 inches thick at the center to 11/16-inch thick at the ends.
- Used to open pores in setting concrete and to draw any excess water to the surface.
- Come with complete bracket assembly.

Resin Bull Floats

Marshalltown offers an array of resin bull floats, each of which work the slab like a wood float but last many times longer.



- Great for working color hardeners into concrete.
- Six-hole mounting plate fits wide variety of mounting configurations.
- Has an angle steel backbone for decreased blade twist.
- Broken-in, beveled edges on ends of work surface.
- Available with square or rounded edges.

✆ **(800) 888-0127**

www.marshalltown.com

Wagman Metal Products Inc. — Bull Floats and Speed Floats

Wagman Metal Products offers a couple of options when it comes to bull floating — their more traditional bull float and their narrower speed float. Both are made from a high-strength recyclable aluminum alloy with better wear resistance than magnesium.

Bull floats:

- T-slot adds strength and allows for attaching virtually any bracket, with no hole threads to strip.
- Angled ends help reduce lap lines.

- High side walls on the leading and trailing edges stiffen the float to avoid warping and twisting. They also act as screed walls for cutting and filling.
- Available with traditional rounded corners or with unique square edges.
- Weights securely bolted on easily.
- Versatile groover accessory can be easily attached to make rough cuts.
- Straightening rods and outriggers can be attached.

Speed floats:

- A faster and easier float to use, as it is narrower and creates less fiction than a bull float.
- T-Slot allows for attaching virtually any bracket, with no hole threads to strip.
- At 5 inches wide, it is ideal for exposed aggregate.
- Great choice for following vibratory screed to knock down lap lines.
- Available with rounded or square ends.

(717) 854-2120
www.wagmanmetal.com

Screed Floats

Pirandello Equipment & Tools — The Screed by Pirandello

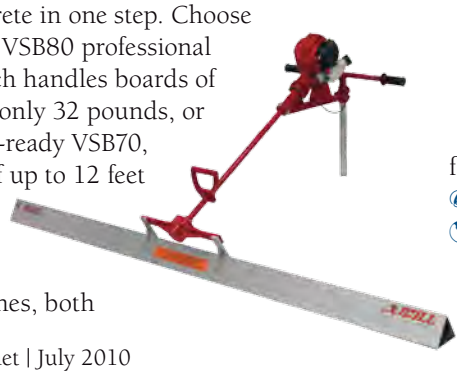
Featuring seven interchangeable magnesium blades ranging from 4 feet to 16 feet in length, this vibrating screed leaves a smooth, fine finish that can be left as is or serve as one step in a finishing operation.

- Ergonomic, extendable handles (no keys required).
- Magnetic support bar.
- Individual antivibration system.
- No visible cables in the handles.
- Flexible vibration shaft.
- Lightweight (21 pounds).
- Honda gasoline engine.

(972) 365-9310
www.pirandello.ca

Stone Construction Equipment Inc. — Screed Bull VSB70 and VSB80

Stone Construction Equipment Inc. offers a hand-held vibrating power screed line — the Stone Screed Bull line. Featuring Stone's patented extruded aluminum screed boards, the Screed Bull offers contractors the opportunity to screed and float concrete in one step. Choose from two models — the VSB80 professional contractor's model, which handles boards of up to 16 feet yet weighs only 32 pounds, or the lighter-weight rental-ready VSB70, which handles boards of up to 12 feet and weighs only 25 pounds.



Powered by four-cycle Honda GX25 engines, both models utilize Stone's patented extruded aluminum screed boards with equilateral triangle geometry. The blades will not bend, twist or warp. The perfect matching of the power unit and boards allow these screeds to work with most slumps.

Additional features include:

- A handle-mounted throttle for fingertip control of vibration.
- Operator comfort from an adjustable handle. Operators can work standing up.
- Cast aluminum frame for longer life and a lighter operating weight.
- Easy removal of the power head from the boards to switch board lengths.

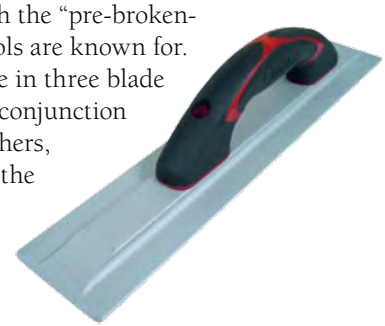
Screed boards are available in lengths from 4 feet to 16 feet. Two-foot extensions can be added to each end of the boards to extend or make custom lengths. Extension straps are also available to connect two power units and boards together to cover larger pours with the same efficiency.

(800) 888-9926
www.stone-equip.com

Hand Floats

Goldblatt Tool Co. LLC — PRO Grip Magnesium Concrete Floats

Goldblatt PRO Grip Magnesium Concrete Floats are made from high-grade magnesium with the "pre-broken-in" design that their finishing tools are known for. PRO Grip mag floats are available in three blade styles. The handles, designed in conjunction with a panel of professional finishers, are ergonomically shaped. All of the signature series PRO Grip tools carry Goldblatt's lifetime guarantee.



(877) 876-7562
www.GoldblattTool.com

Kraft Tool Co. — Laminated Canvas-Resin Hand Float

Kraft Tool Co.'s Laminated Canvas-Resin Hand Float is a particularly good choice for decorative concrete applications.

- Face is sanded and broken in for just the right feel for finishers.
- The 3/8-inch thick canvas resin material is long-wearing and does not seal the concrete surface, which aids the decorative coloring process.

Kraft also offers many mag and wood (redwood and teak) floats.

(800) 422-2448
www.KraftTool.com

Marshalltown Co. — Hand Floats

Marshalltown offers a variety of hand floats made from magnesium, wood or resin.

Magnesium hand floats:

- Cast from the finest magnesium.
- Designed with just the right broken-in shape.
- Cast construction allows more knuckle clearance.
- Placement of handle gives the float perfect balance.
- Available with wood, Dura-Soft or structural foam handles.

Wood hand floats:

- Made from clear 3/4-inch-thick seasoned redwood or Jarrah hardwood, which is harder than teak.
- Primarily used for leveling and smoothing concrete prior to final finish.
- Also ideal when slightly rougher concrete is desired.
- Available with wood or Dura-Soft handles.

Resin hand floats:

- Made from 3/8-inch-thick laminated canvas resin.
- Extremely dense.
- Works the slab like a wood float but lasts longer.
- Great for working color hardeners into concrete.
- Available with square or rounded ends.
- Wood or Dura-Soft handles available.

✆ **(800) 888-0127**

www.marshalltown.com

Wagman Metal Products Inc. — T-Slot Pro Hand Floats

Wagman offers magnesium and cast aluminum hand floats featuring their T-slot design. The T-slot design allows operators to attach a variety of handles in an assortment of positions according to the comfort of the user and the demands of the job.

Hand floats:

- T-slot design allows various handles and positions.
- Available in recyclable aluminum alloy or magnesium.
- Strong center rib adds durability.

Jumbo hand floats:

- T-slot design allows various handles and positions.
- Made from recyclable aluminum alloy.
- Long handle attaches for hard to reach places.
- Width of 5 inches is ideal for decorative applications.

Wagman also offers wood and resin hand floats.

Laminated resin floats:

- Works like wood, wears like steel.
- Gives exceptionally fine finish with no break-in period.

Mahogany hand floats:

- Made from the finest selected mahogany.
- Vertical grain.
- Polypropylene handle.

✆ **(717) 854-2120**

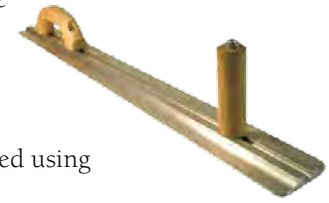
www.wagmanmetal.com

Hand Darbies

Wagman Metal Products, Inc.

Wagman offers darby floats for virtually any application. Most feature their T-slot design for various handles and positions and a strong center rib for added strength.

Aluminum hand darbies with dowel handle:



- 3 1/8-inch-wide aluminum with one float handle and one dowel.
- Stronger than common magnesium hand darbies.
- Engineered for rugged performance to withstand heavy pounding with low-slump or stiff mixes.
- T-slot center rib allows infinite handle settings.
- Any number of handles can be added using 1/4-inch hardware.
- Dowel handle.

Aluminum hand darbies:

- 3 1/8-inch-wide aluminum with two float handles.
- Stronger than common magnesium hand darbies.
- Engineered for rugged performance to withstand heavy pounding with low-slump or stiff mixes.
- T-slot center rib allows infinite handle settings.
- Any number of handles can be added using 1/4-inch hardware.
- Dowel handle.
- Becomes swing darby with simple modification.

Two-loop handle mahogany darbies:

- Made from the finest ribbon-tapered-grain select mahogany.
- Double contoured grip-loop handles for extra comfort.

✆ **(717) 854-2120**

www.wagmanmetal.com

Product News

New products from H&C

H&C Concrete Coatings has released several new decorative concrete products.

H&C Stampable Overlay is a stampable cementitious topping that can be used to resurface driveways, patios, pool areas, malls, theme parks, parking lots and other types of interior and exterior surfaces.

H&C Liquid Release is a blend of evaporating, residue-free release agents for use in the imprinting process to allow the clean release of texturing tools from concrete or overlay surfaces. It is recommended for use with H&C's Stampable Overlay Single Component to ensure stamps don't stick to the wet topping.

H&C Semi-Transparent Decorative Stains allow contractors to achieve a layered, faux or single-color look in significantly less time and without any acids or harmful chemicals. In addition to being an environmentally friendly product, it is UV-resistant, can be applied in both interior and exterior settings, requires no neutralization and allows easy cleanup. It is available in 28 colors.

H&C Acetone Dye Stains let concrete contractors achieve a layered, faux or single-color look in significantly less time than with traditional acid stains. The stains are available in 16 colors and packaged in small bottles. Dry to the touch in just 20 to 40 minutes, they require no neutralizing, have zero VOCs, can be mixed and are perfect for polished concrete or older substrates.

H&C Broom Finish Repair is perfect for salt-damaged driveways and sidewalks. Simply trowel or squeegee-apply the topping for interior or exterior repairs. The coating is high-impact and abrasion-resistant and, once applied, aids in slip resistance. Broom Finish Repair goes on very thin and, when cured, has the typical broomed concrete look. It can be used with any H&C color pack.

H&C High Performance Industrial Concrete Clear Coat features an extremely high-gloss finish that enhances and protects previously coated bare concrete and other masonry surfaces. It's a urethane-based, high-solids coating with high impact resistance, and it is VOC-compliant in most states. The solvent-based sealer can put the final touch on most decoratively stained concrete surfaces.

Finally, H&C Quick Concrete Patch and Repair can be used to repair above- or below-grade damaged concrete surfaces and produce a bond that is actually stronger than the surrounding concrete. This single component, cement-based patching compound provides a workable, no-slump patch. It sets up fast for a quicker return to service — final setup time is just 15 to 30 minutes — and it withstands more than 6,000 psi after a 28-day cure period. It is both paintable and stainable.

(800) 867-8246

www.hcconcrete.com

Stain guard for polished concrete

Innotech Stain-Guard has been added to Innotech's product line. Innotech Stain-Guard is a high-gloss protective coating for polished concrete. It's made from a unique blend of specially selected micropolymer hybrids designed to form a durable high-gloss microfinish on and in polished concrete. Innotech Stain-Guard develops rapid hardness, scratch, scuff and water resistance, and stain resistance to a variety of food products, including lemon juice, vinegar and bleach. This product applies easily in a one- or two-coat application, dries in 45 minutes and has a coverage rate of 1,500 to 2,000 square feet per gallon. It also provides an excellent nonslip surface and exceeds the static coefficient of friction measurement set by ASTM D2047.

(877) 829-7880

www.innotechdcp.com

GG develops sealer

GG VO-Seal from GG Innovative Products is a low-VOC, environmentally safe waterborne acrylic clear sealer for all concrete and cementitious toppings.

It is UV-protected, making it ideal for exterior applications as well as interior applications. GG VO-Seal is resistant to water, food spills, chemicals and greases. It is also antibacterial and antifungal.

(541) 678-7364

www.gginnovativeproducts.com

ChemSystems announces polyaspartic coating

Helix PolySpartic 65 SB from ChemSystems Inc. is a two-part polyaspartic aliphatic polyurea sealer/finish coating for decorative and protective applications.

Helix PolySpartic 65 SB is unique in that it is a multiuse 65 percent solids coating. Being self-priming, the material can be applied in single or multiple coats by brush, roller, squeegee or sprayer to a variety of substrates, including concrete, wood and metal. It can be applied over decorative concrete surfaces such as acid-, color- or dye-stained concrete, semipolished concrete or polymer-modified cementitious overlayments. It can be employed within seamless multibuild paint chip and quartz flooring systems. Important characteristics of Helix PolySpartic 65 SB are its excellent penetration and bond strength, UV resistance and excellent color and gloss retention.

Helix PolySpartic 65 SB is fast-curing and provides excellent impact, abrasion, and chemical resistance characteristics with flexible properties. Suitable for high-traffic interior or exterior applications, it can be used as a clear topcoat sealer in conjunction with Helix Concrete Dye to create a transparent stain, or with a tint pack to create solid-color surface applications.

(800) 545-9827

www.chemsystemsinc.net

New crack repair epoxy

Increte Systems has released Increte Weld LV Crack Repair, a fast-setting, high-strength crack repair epoxy.

Increte Weld LV Crack Repair is a 100-percent solids, rapid-cure epoxy compound that is compatible for use with cementitious overlays and toppings. Packaged as a two-in-one cartridge, it is sold in individual 10-ounce tubes or in cases of 24.

(800) 752-4626

www.increte.com

Cementitious overlay for wood substrates

Concrete Coatings of Georgia Inc. has introduced a two-part coating primarily designed to coat wood decks. Aspecto-Coat adheres to wooden substrates, creating a cementitious overlay coating that protects and refurbishes old decks. Aspecto-Coat moves, bends and breathes to make the substrate and overlay act as one.

Aspecto-Coat is intended to help refurbish old decks that are beginning to fall apart. It leaves the surface with a texture similar to that of composite deck boards. Customer color requirements can be matched. Aspecto-Coat is available in two part kits, Part-A and Part-B.

www.aspecto-coat.com

Product updates from Chem Link

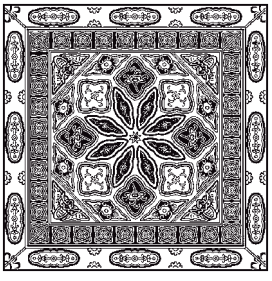
Chem Link now offers its DuraLink Super Adhesion Sealant in 20-ounce sausages in addition to the standard tubes. The sausage packaging has proven its popularity with other products for practical reasons: there is more volume and less change-out of tubes, meaning significantly less waste of material and time.

Additionally, the one-part pourable sealer for the ChemCurb System Penetration Seal is now offered in white and black as well as the original gray.

Finally, NovaLink SL self-leveling sealant is now also available in black in addition to stone and gray.

www.chemlinkinc.com

New machine improves Engrave-A-Crete offerings



Engrave-A-Crete is now using the Flow water-jet cutting machine, which allows Engrave-A-Crete to cut more intricately patterned templates and stencils for decorative concrete engraving and staining.

The water jet is capable of cutting finely detailed borders, corners, medallions, rug design patterns, custom logos and any material up to 10 inches thick. Finely cut and sharply detailed inlays for polished concrete and concrete countertops can be produced out of any material imaginable.

(800) 884-2114

www.engrave-a-crete.com

Dry Diamond Polishing Pads from Applied

Applied Diamond Tools has introduced the 3-inch ADT Dry Diamond Polishing Pads for concrete floor polishing.

These polishing pads are made for dry-polishing concrete floors. They are available in 50 grit through 3,000 grit, as well as in buff pads. Each pad is color-coded and Velcro-backed for quick changes.

www.toolocity.com

Aztec introduces the Grand Finale Floor Finisher

Aztec is introducing the Grand Finale, the newest addition to their extensive line of floor-stripping, buffing and polishing machines.

The Aztec Grand Finale is a simple, rugged floor-chemical application machine designed to apply floor finishers, concrete densifiers, hardeners and sealers quickly and uniformly. The Grand Finale also completes the Aztec Sidewinder Stripping System with an easy-to-use floor wax applicator.

The Grand Finale provides an easy, high-speed way to lay down a smooth, uniform coat of fresh floor finish at an average rate of approximately 50,000 square feet per hour.

www.aztecproducts.com

New RH testing meter from Wagner

The new Rapid RH 4.0 from Wagner Electronics combines their patented Smart Sensor and a redesigned Easy Reader with patent-pending Touch-n-Sense technology for easy-to-use, fast and accurate RH testing.

With Touch-n-Sense technology, the Easy Reader comes to life on contact with the Smart Sensor — turning on, taking a reading, and holding the data display for five minutes before powering off. Subsequent readings can be taken at any time with immediate results.

www.wagnermeters.com

Increte releases stamped overlay grout, color packs

Increte Systems has introduced Thin-Crete Tintable Stamped Overlay Grout and Thin-Crete Color-Packs.

Thin-Crete Tintable Stamped Overlay Grout is an ecofriendly, single-component formula that mixes with water and is the same formula as Increte Systems' Thin-Crete.

Thin-Crete Tintable Stamped Overlay Grout is available pre-colored for large orders as well as in custom colors and custom color packs. It is available in 50-pound bags.

Thin-Crete Color-Packs are available in a spectrum of 30 standard colors and premeasured for convenient addition directly to the grout base when mixing. Colors are computer-formulated and produced to provide consistent color every time.

Thin-Crete Color-Packs are available in one-pound packages.

www.increte.com

Hand-held polishing pads from Buddy Rhodes

Highlighted at the 2010 Concrete Decor Show & Decorative Concrete Spring Training in Phoenix, a line of diamond impregnated hand-held polishing pads from Buddy Rhodes Concrete Products is aimed at concrete furniture and countertop crafters.

Made specifically to polish and grind very hard surfaces, BR diamond pads effectively knock down high spots and edges and stand up to repeated, punishing use when polishing, detailing and corner finishing, even inside sink bowls and along walls.

Manufactured using an ergonomically designed, semipliable foam backing with ambidextrous finger grips, the pads feature a diamond surface that has been extended to fill the entire face, allowing the diamond material to meet the edges of the pad without any foam buffers. Highly uniform diamond bedding prevents chipping when working delicate materials, while producing a uniformed grinding and polishing profile. Also, these pads are designed to last.

The pads are available individually or in a set of 60-, 120-, 200- and 400-grit pads.

(877) 706-5303

www.buddyrhodesconcretetools.com

MK Diamond releases saw for decorative concrete

The MK Diamond MK-S saw is a handheld scoring saw, ideal for the decorative concrete industry. It gives the user the flexibility to complete scoring tasks with ease.

The MK-S Score Saw is built with high-grade aluminum, which provides a precision frame for easy gliding over any surface. This aluminum frame is also durable and lightweight. It has adjustable guides for different operator positions, and the cutting depth is easily adjusted down to a maximum of 1 1/2 inches with a simple thumbscrew.

Front and rear roller guides allow users to easily follow chalk lines or pounce patterns for accurate cutting. For safety and convenience, a spring-loaded head allows users to easily push the blade down to cut, then automatically retracts the

blade when it's not in use.

The MK-S Score Saw features an optional pivot base that can be used for radial cuts to create geometric shapes, arcs and circles. Quickly assembled, the pivot base uses a vacuum system, which eliminates the need for heavy weights or adhesive tape.

The MK-S Score Saw has a dust shroud built around the blade. The low-dust blade-block system allows the saw to cut dry, and it controls dust and debris for easy cleanup.

www.mkdiamond.com

General Equipment grinder for smaller projects

Designed for smaller-scale surface preparation projects, General Equipment Co.'s SG12/E single-head surface grinder offers high performance, durability and ease of use.

Powered by a totally enclosed, fan-cooled 1.5-horsepower electric motor, the SG12/E features a single rotating disc with a 12-inch-wide working width. Offering a top disc-rotation speed of 250 rpm, the SG12/E can be used for applications including grinding concrete surfaces, removing mastics, adhesives, epoxies and urethanes, breaking up deposits of grease and dirt, removing rubber carpet backing and industrial residues, and polishing delicate terrazzo and marble floor surfaces.

Built for portability, the SG12/E includes a folding handle with full height adjustability. A compact frame design and wheel position allow for simple maneuvering up and down stairwells.

A removable safety and dust shield surrounding the rotating disc helps contain airborne dust and limits material contamination, while also protecting the machine's internal components from damage.

For maximum safety, the SG12/E includes the exclusive Quik-Stop deadman motor switch, which immediately stops the grinder's motor in the event the operator loses control of the machine.

The SG12/E accommodates the same wide variety of attachments currently available with General Equipment's larger, dual-head SG24 Series of surface grinders.

(800) 533-0524

www.generalequip.com

Milestone vertical overlay system debuts

Rudd Company Inc., manufacturer of SkimStone decorative concrete systems, is introducing Milestone, a cementitious overlayment system for vertical surfaces that gives you a variety of looks and finishes in a short amount of time.

The Milestone System may be applied over a wide range of surfaces with a number of textures and countless color options. The line includes Milestone Basecoat Mix, White Powder Cement, Fusion Acrylic Solution, Milestone ColorPaks, Milestone Amber Wall Wax and Milestone Sealer. Milestone performs great on small jobs all the way up to large commercial applications.

Milestone was introduced at the Concrete Decor Show & Decorative Concrete Spring Training in March 2010, and Rudd is currently holding training classes at on-site locations and through distributors.

(800) 444-7833

www.ruddcompany.com

www.skimstone.com

Samich USA introduces polisher

The Legend CT flex planetary polisher from Samich USA is ideal for grinding and polishing countertops, stairs, small surfaces, edges, corners and other narrow areas.

There are two models available: the Legend CT Variable and Legend CT. Each machine features 5 1/2-inch heads and has a working width of 13 inches, plus 600 watts of power. The Legend CT machine offers grinding speeds of 1,000 rpm, while the Legend CT Variable offers speeds ranging from 400 rpm to 1,500 rpm.

(888) 972-6424

www.samich-usa.com

Aztec introduces UltraGrind grinder/polisher

Aztec Products Inc. has introduced the UltraGrind propane-powered, planetary-head, gear-driven grinding and polishing machine.

The Aztec UltraGrind has been designed for the more aggressive concrete floor grinding and polishing applications, where the goal is to both remove material and highly polish concrete floors. The UltraGrind machine is complementary to the Aztec DiamondShine, which is specifically designed for ultra-high-speed, large-area concrete polishing applications.

Weighing more than 500 pounds, the UltraGrind

provides 40 pounds of head pressure per diamond abrasive for maximum results. The UltraGrind has industry-standard 2-inch exhaust ports for concrete dust vacuums. It also has an 8-gallon water tank, potentially adding up to 80 additional pounds of head pressure and allowing the user to rewet the floor while polishing.

The Aztec UltraGrind is powered by the new 20-horsepower Kawasaki 603CC engine.

www.aztecproducts.com

New variety packs available for Ceramica pads

Alpha Professional Tools is now offering its Ceramica Diamond Pads in convenient variety packs.

The new packs available are the Ceramica EX 4-inch Kit, Ceramica TF 4-inch Kit, and Ceramica Dry 4-inch Kit.

(800) 648-7229

www.alpha-tools.com

Two vacuums in one

The DuoVac from Ruwac combines the power of two individual vacuums to create 680 cfm and 100 inches of water pressure with a 220-volt continuous-duty motor. The vacuums can also be easily detached for separate use.

The Vacuum-on-Demand feature allows for controlled suction. The power box allows a grinder to be plugged in with the vacuum. It works with grinders of up to 44 inches and four seven-inch hand grinders.

Ruwac vacuums are certified "Dustless," and the MicroClean filtration system on the DuoVac gives the operator a dust-free system. The entire system is compact, portable and rolls easily on 3-inch heavy-duty casters.

www.concretevacuums.com

New DustFinder shroud, dust collector

The DustFinder system from Pathfinder Concepts LLC collects fine dust, such as concrete dust, terrazzo dust and more.

The DustFinder features Donaldson Torit's Spun Bond Ultra-Web technology, which produces a very fine, continuous, resilient fiber of 0.2 to 0.3 micron in diameter. The technology helps make a permanent nanofiber web with very fine interfiber spaces that traps dust.

Filters are sequentially blasted with a burst of air from the blower exhaust chamber, ejecting any dust or debris from the surface of the filters and allowing a continuous flow of air. Additionally, the system features a simple unload valve that provides several options for removing the dust and debris accumulated, and the valve keeps the debris enclosed in the tank until it is time to unload. With a simple turn of the rotating lever, the system will unload the contents of the tank into one of several removal containers.

The EdgeFinder dust shroud is fabricated out of steel. It incorporates a dense rubber seal that is attached via Velcro. The shroud will achieve "zero edging" on three sides with the seal in place, and the front two corners are cut back to provide edging around odd shapes. The EdgeFinder is equipped with an adjustable grinder mounting system that allows quick and easy mounting to most 7/9-inch angle grinders without adding anything else. The dust port is 1 1/2 inches, allowing use of smaller hoses.

The DustFinder incorporates a unique mounting system that allows fit-up without changing or adding anything to any angle grinder with a bearing case measuring 2 inches through 2 7/8-inches.

(877) 261-6002

www.pathfinderconcepts.com

Leica offers new distance meter

The Leica Disto D210XT from Leica Geosystems is the company's latest laser distance meter.

Disto D210XT offers continuous measurement for staking out distances, minimum and maximum distance measurements, and area and volume measurement. It is protected against jet water and completely sealed against dust. It features a sealed keypad, impact-resistant housing, a wear-resistant four-line display, and a multifunctional end-piece with automatic position detection for measuring out of corners and from edges. It also passed drop tests from 6 feet high thanks to its rubber jacket.

www.leica-geosystems.com

Skid steer pump from Blastcrete

Blastcrete Equipment Co. now offers the Model RD6536 Skid Steer Pump Attachment. Featuring a universal design compatible with any skid steer, the 3-inch hydraulic squeeze pump is ideal for ICFs, block fills, form-and-pours, driveways, basements and various shotcrete applications.

With the ability to pump grout materials, 3/8-inch shotcrete, and 3/4-inch structural concrete mixes, the RD6536 is a fast, efficient solution for contractors performing a variety of concrete and shotcrete applications. The unit offers a variable speed of up to 25 cubic yards per hour. Vertical pumping distance reaches 50 feet with the use of a rubber delivery line, while horizontal distance can reach up to 250 feet.

A hydraulic agitator is included in the receiving hopper. The agitator's continuous motion keeps the mix well blended, ensuring aggregate and sand stay evenly suspended throughout the mix. Not only does this result in high-strength concrete, it keeps the aggregate and sand from settling to the bottom of the hopper and clogging

ChemMasters introduces new brochure

ChemMasters Inc. has introduced new product literature showcasing its extensive line of concrete cures, concrete cure-and-seals, and concrete sealing products for professional use.

Five ChemMasters solvent-based cure-and-seal products for concrete are profiled, including those for decorative and broom-finished concrete. Seven water-based concrete cures or cure-and-seal products are discussed. Included are penetrating sealers, water repellents and concrete hardeners and densifiers. Many special-use concrete chemicals are also profiled, including an evaporation retarder, a gloss restorer, antislip additives and tint products. An extensive selection of water-based highway and airport concrete cures rounds out the piece.

(800) 486-7866

www.chemmasters.net

ConcreteResurrection.com offers e-commerce

ConcreteResurrection.com has been relaunched as an e-commerce store, allowing customers to place orders for decorative concrete supplies 24 hours a day.

Products on the new site include acid and pigmented stains, acrylic sealers, epoxies, urethanes, accessories, templates, stencils and concrete engraving tools. Concrete Resurrection maintains free, ongoing tech support for its products.

Concrete Resurrection is a subsidiary of Engrave-A-Crete Inc. and specializes in decorative concrete stains and sealers.

www.concreteresurrection.com

Sakrete launches new Web site

Sakrete has launched its new Web site with improved product features and capabilities, which include product information and project "how-to" videos. A new concrete calculator is available to assist customers in selecting the right amount of company material for each specific project.

(800) 738-1621

www.sakrete.com

Online store now available for Gunite Supply

Gunite Supply & Equipment has launched the Gunite Store, an online store that allows ordering of shotcrete tools, nozzles and other accessories. The Web site allows gunite and shotcrete contractors to easily search through the catalog of tools and accessories.

The Gunite Store offers a complete line of tools, parts, and accessories for the shotcrete contractor. Product categories include shotcrete hose (wet-mix), gunite hose (dry-mix), hose couplings (dry-mix), shotcrete clamps (wet-mix), gunite nozzles (dry-mix), shotcrete nozzles (wet-mix), plaster nozzles and finishing tools.

Service and sales support are available by contacting any of Gunite Supply's three locations, in Monrovia, Calif., Cincinnati and Houston.

www.gunite.us

near the suction area.

To relieve pressure buildup clogs and eliminate potential damage to the pump, the RD6536 can be run in both forward and reverse. Hydraulically powered controls are located on the pump and operate both agitator and pump speed. Cleanup on the RD6536 squeeze pump is fast and hassle-free. Using just water and a sponge ball, the pump can be cleaned out in approximately five minutes.

(800) 235-4867

www.blastcrete.com

Mixing trailer from Pitts

Pitts Engineering Works LLC has released the Model 125/F Concrete Titan Heavy-Duty Mixing Trailer.

An electronically controlled hydraulic system on the 125/F eliminates the mechanical-control valve body of years past. The new electronic control panel controls main power, ignition, remote starting, engine throttle and choke controls, drum direction mode (mix and discharge), variable drum speed control, variable tilt position control (transport or discharge), and the onboard water system. The control panel, specifically designed for the extreme-service environment of construction machinery, is completely sealed, and all controls are conveniently located. Drum direction and speed is electronically metered. A built-in ramp up or down delay kicks in when starting or stopping the drum rotation, or when changing rotation direction.

The 125/F has a rated capacity of 1.25 cubic yards, a larger gross vehicle weight rating of 10,160 pounds and increased water-washout system capacity of 51 gallons.

(877) 693-9372

www.pittsengineering.com

Association News

American Concrete Institute

New executive VP named

The American Concrete Institute has announced that Ronald G. Burg, formerly vice president at CTLGroup, has been named executive vice president of ACI upon the retirement of William R. Tolley.

Burg joined the staff of CTLGroup in 1983, where he moved up the ranks, beginning with research engineer and moving on to quality assurance coordinator, senior research engineer, manager of fire/thermal technology, director of materials technology, principal engineer, and eventually vice president.

An ACI member since 1984, Burg is a Fellow who has served on ACI's Board of Direction as well as on many committees. In 2001, he received ACI's Wason Medal for Materials Research for his work on "Compression Testing of HSC: Latest Technology." Burg is also a member of several other industry associations, including the Construction Institute of the American Society of Civil Engineers, the Precast/Prestressed Concrete Institute, and ASTM International.

www.concrete.org

Fall convention to be held in Pittsburgh

The American Concrete Institute's Fall 2010 Convention will take place Oct. 24-28, 2010, in Pittsburgh, Pa., at the Westin Convention Center Hotel & David L. Lawrence Convention Center.

Held at the world's first "green" convention center, "Green Concrete in the Steel City" is intended to expand attendees' knowledge of concrete and sustainability throughout 300-plus committee meetings and more than 30 technical sessions, forums, tours and networking events.

ACI Concrete Sustainability Forum III, the third in a series of forums addressing the topic of sustainability in the concrete industry, will precede the convention on Saturday, Oct. 23. This, combined with the several sessions approved for continuing education credit by the U.S. Green Building Council and American Institute of Architects, will provide attendees with valuable insight into sustainability and its effects on the concrete industry.

Beyond education, the ACI Fall Convention offers numerous opportunities to network with key industry decision-makers.

(248) 848-3795

www.aciconvention.org

ACI Foundation fellowship and scholarship winners announced

The ACI Foundation has announced the winners of its fellowship and scholarship program for students whose studies relate to the concrete industry.

Winners for the 2010-2011 academic year are: Matthew Fournier, University of Minnesota-Duluth, ACI Elmer Baker Student Fellowship; K.V. Harish, Clemson University, BASF

Construction Chemicals Student Fellowship; Christopher Shearer, Georgia Institute of Technology, ACI Presidents' Fellowship; Christopher Motter, University of California, Los Angeles, Charles Pankow Foundation ACI Student Fellowship; Jonathan Stratton, University of Florida, ACI Baker Student Fellowship; Aaron Woods, University of Texas at Austin, ACI Richard N. White Student Fellowship; Reid Zimmerman, University of California, Berkeley, ACI Bertold E. Weinberg Scholarship; Kevin Mueller, University of Notre Dame, Kumar Mehta Scholarship; Ashlee Hossack, University of New Brunswick, ACI W.R. Grace Scholarship; Benjamin Webster, University of Kentucky, Katharine and Bryant Mather Scholarship; and Mark Steenhof, University of Waterloo, ACI Scholarship.

The ACI Foundation Fellowship/Scholarship Program for the 2011-2012 academic year is open until Nov. 5, 2010.

www.scholarships.concrete.org

New publications available

The American Concrete Institute has three new publications available: Advances in the Material Science of Concrete CD-ROM (SP-270); Report on the Foundations for Static Equipment (351.2R-10); and Guide to Design of Slabs-on-Ground (360R-10).

(248) 848-3800

www.concrete.org

American Shotcrete Association

Graduate scholarship program open

The American Shotcrete Association is now accepting applications for graduate scholarships for the 2010-2011 academic year.

The purpose of the ASA Graduate Scholarship Program is to attract, identify and assist outstanding graduate students pursuing careers in the field of concrete with a significant interest in the shotcrete process. One scholarship will be awarded to a graduate student attending an accredited college or university within the United States, and a second scholarship will be awarded to a graduate student attending an accredited college or university within Canada. Based on essays, submitted data and references, the ASA Scholarship Committee will select scholarship recipients who appear to have the strongest combination of interest and potential for professional success in the shotcrete industry.

www.shotcrete.org/ASAscholarships.htm

International Concrete Repair Institute

Certification program launched

The International Concrete Repair Institute has launched the association's first complete certification program — the Slab Moisture Testing Technician Certification, Grade I. The purpose of this program is to help improve the performance of concrete-slab moisture testing in the United States, resulting in more consistent, accurate results that will help flooring manufacturers, architects and contractors make better decisions as to when a concrete floor is ready for a floor-covering installation.

The ICRI Slab Moisture Testing Technician Certification program has two tiers. Those interested in attending both Tier 1 and Tier 2 must complete a registration form and an application. Tier 1 applicants are those who are not regularly engaged in moisture testing, yet have an active interest in learning more about the tests, what the tests mean and how the tests should be performed. It consists of a three-hour educational session, a written exam and a training session. Those who complete Tier 1 and pass the exam will be issued an ICRI Letter of Achievement.

Tier 2 applicants are those who have applied for full certification. It consists of the same three-hour educational session, plus a written exam and a field-testing performance exam. After both the exams are passed, a Slab Moisture Testing Technician Certification, Grade I certification will be issued. The prequalification for acceptance into Tier 2 will be previous testing experience.

ICRI plans to hold several Slab Moisture Testing Technician Certification programs across the country in 2010.

www.icri.org

Classifieds

DECORATIVE CONCRETE SUPPLIES & TRAINING

Concrete Marketplace

Have You Topped Yourself *Lately?*

Concrete Decor magazine is seeking submissions for the **2010 Concrete Countertop Design Competition.**

Submit your favorite projects today!

Deadline extended to Aug. 16!

Countertop submissions may be submitted in two categories: Residential and Commercial/Public.

Each entry will be evaluated by a panel of experts on the following criteria:
- Aesthetic appeal
- Functionality
- Creativity and originality
- Design challenges that were overcome
- How well the countertop complements its surroundings

Each entry must include a brief explanation of the project, describing the ways in which it meets these criteria. Entries must also include print-quality photos of the finished project.

Winners will receive prize packages worth more than $1,000 supplied by our industry-leading sponsors.

Note: Only projects completed on or after January 1, 2009, are eligible.

Deadline: All entries must be submitted by August 16, 2010.

To enter: Access the nomination form at www.concretedecor.net/Forms/Concrete_Countertop_Contest.cfm

Questions? Contact: john@protradepub.com (877) 935-8906 x204

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Concrete Decor — The Journal of Decorative Concrete

Concrete Marketplace

Concrete Quarters

Concrete Quarters

More Than a Cemetery


Photos by Carlos Delgado

Decorative concrete lends color, resonance and beauty to the African Cemetery Memorial, completed last year at Higgs Beach in Key West, Fla.

The concrete memorial marks the burial site of at least 15 Africans, part of a larger group who were rescued from slave traders' ships in 1860 by the Navy.

Adinkra-adorned concrete columns circle the edges of the 1,500-square-foot memorial. The slab itself is covered with a stylized map commemorating the abductees' journey, with 15 superimposed circles marking each gravesite.

Dinizulu Gene Tinnie designed the map as well as the pillars, but it was Miami artist Carlos Delgado who brought Tinnie's map concept to life, using materials from Engrave-A-Crete Inc. and SuperStone Inc.

Tinnie was referred to Delgado through Engrave-A-Crete and approached him on behalf of Monroe County, Fla. Delgado, who has a Bachelor of Fine Arts degree in traditional and graphic art and a Master of Fine Arts degree in computer art and 3-D animation, used his gifts to add shading, depth and realism to Tinnie's design. "It was very flat," Delgado says. "For example, part of the sea, the water, was only blue. I said, let's do something more like a mural."

To prep the slab, he cleaned with a pressure washer, then ran diluted muriatic acid over the area so pores were open and ready to absorb stain. He washed off the residue and let the concrete dry.

Delgado projected the design onto pattern paper, perforated the lines, then transferred it onto the slab, making adjustments where needed. "He decided to approach this project the old fashioned way: patterns, brushes, and stains," says Diana Delgado, Carlos' wife.

Delgado created the colors needed for the project by mixing Engrave-a-Crete base colors. "He found these stains easy to work with and mix, very similar to oils and acrylics." Diana Delgado says.

"The brushes that he used are artist's brushes with natural bristles. He used these brushes to make the artwork look like a painting. Basically, what he achieved is a floor mural painted with stains rather than oils or acrylics."

Small circles indicating the graves on the original design were increased in size to have more impact. Delgado created the circles freehand, giving the markers a warm, handmade feel that honors the deceased.

He sealed the mural with several coats of clear solvent-based sealer from SuperStone.

The columns surrounding the mural also benefited from Delgado's expertise — he used red, black and beige stains to make Tinnie's textured designs pop, then sealed each pillar for posterity.

www.degaartsurfaces.com

Special Section

Pro Polisher

THE PROFESSIONAL GRINDING & POLISHING CONTRACTORS' GUIDE

Polished Concrete in Schools p. 68

Project Profile: Floors at Solyndra Facility p. 74

Polishing Perspectives *by Peter Wagner, CSI* p. 78

Thoughts From the CPAA p. 82

Specialized Construction Services Inc. worked with D & B Industrial Floor Coatings to create these gleaming concrete floors at the Rothwell Student Center, University of Wisconsin-Superior. The floors are polished to only a 400-grit resin finish, but were burnished high-speed with a glossy protective treatment from Prosoco Inc. containing lithium silicate.

Photo courtesy of Shawn Wardall

A Professional Trade Publications Magazine

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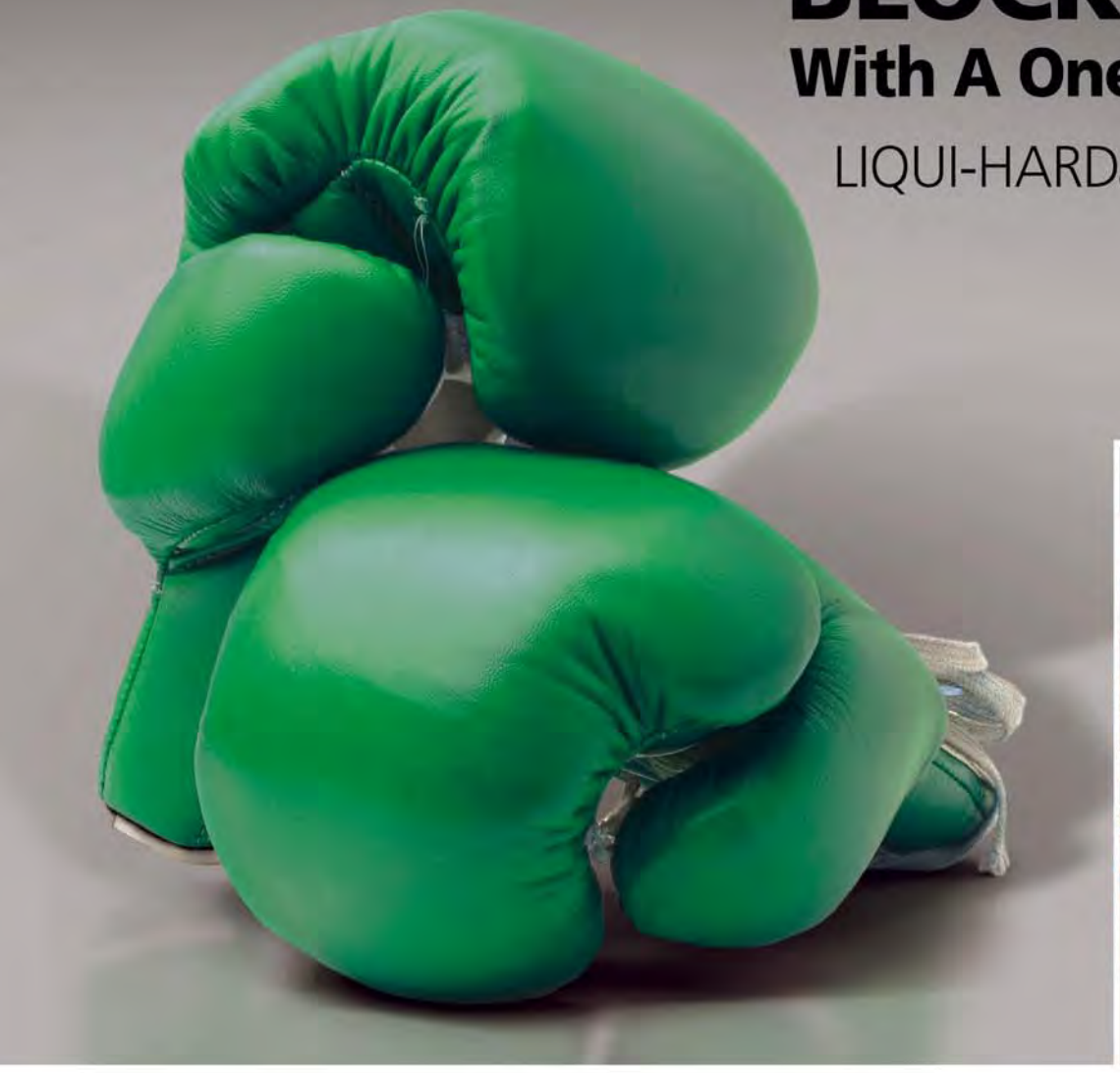

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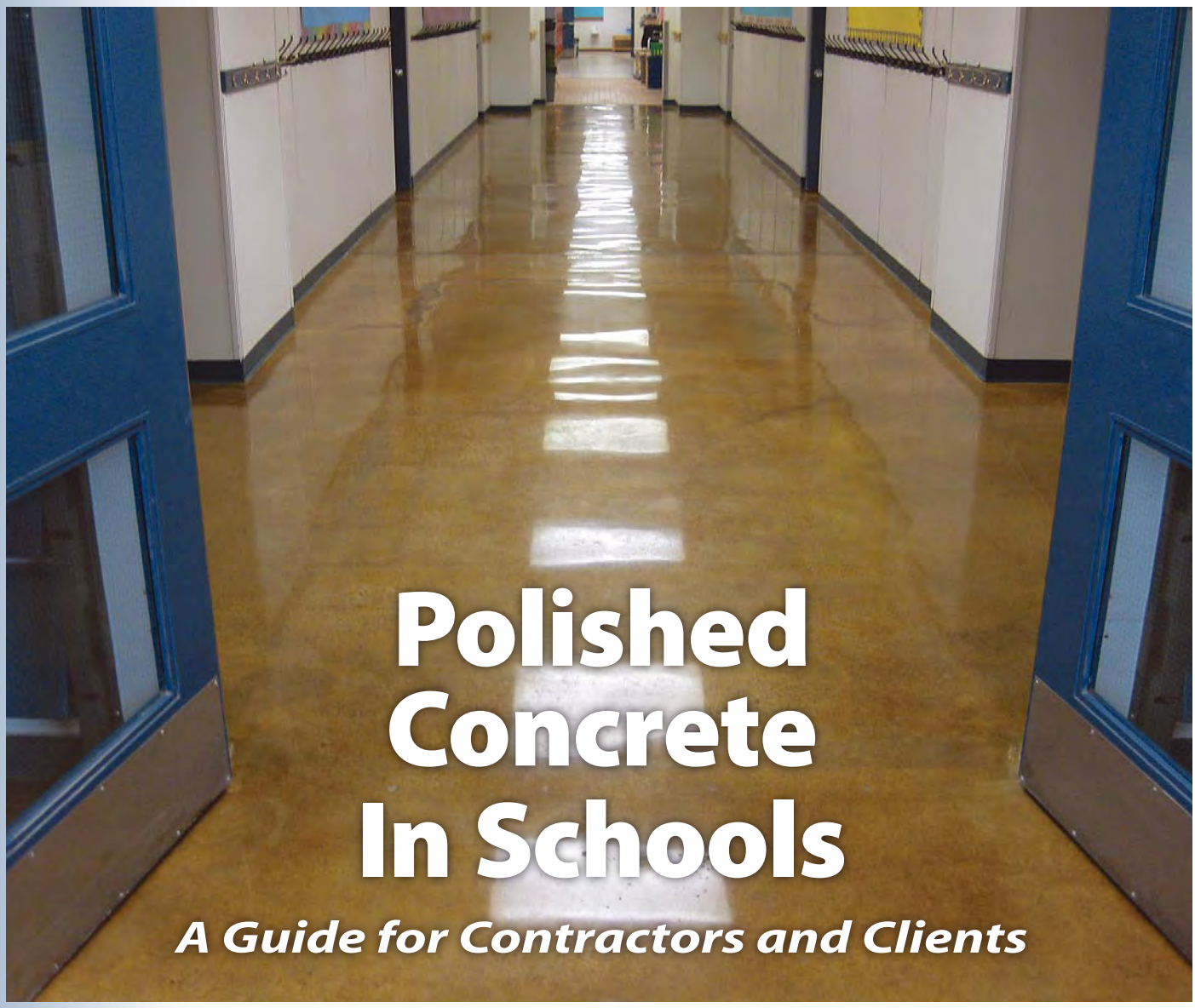

Polished Concrete In Schools

A Guide for Contractors and Clients

Photo courtesy of Clint Buswell

Clint Buswell, Concrete by Design, Alberta, Canada, created the floor in this hallway at St. Matthew's Middle School, Rocky Mountain House, Alberta. He used Prosoco's Consolideck LS lithium-silicate hardener/densifier and a caramel-color acetone stain to do it. The floor is polished to an 800-grit resin finish, and the glossy microthin lithium-silicate-containing protective coating has been burnished in at 3,000 rpm.

by Gary Henry

School flooring has long been the domain of carpet and vinyl.

That's changing. Officials who run elementary and secondary schools (and even colleges) are becoming aware of concrete flooring as an option. And concrete flooring professionals have begun to notice schools as a market.

That said, decorative concrete is better suited for some areas of a school than others, an important fact to keep in mind when bidding and designing projects.

Areas where concrete works

Concrete flooring is ideal for most areas in schools, with a few exceptions and considerations. That's according to Prosoco representative Ron Saunders, who estimates he's worked on or consulted on more than 60 schools during his 20-plus years in construction.

Concrete flooring, with its durability, aesthetic potential and low maintenance requirement, is ideal for classrooms, restrooms, offices, and common areas like lobbies, auditoriums and hallways. A consideration — some might say drawback — is that areas with hard flooring can be noisy. Saunders calls noise ricocheting off hard surfaces "sound-slap." He notes that auditoriums usually have sound-deadening panels on the walls.

Carpet can quiet noisy classrooms — it just goes on the walls, not the floors, Saunders says. Carpet takes much less of a beating and lasts longer on walls than on floors. Concrete is meant to take a beating, so the classroom floor is a good place for it.

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Photo courtesy of Joe Smith

This auditorium at Millstone Township Middle School, N.J., features a combination of carpet and exposed concrete. Joe Smith, Natural Stone Care, Media, Penn., hardened and densified the floor and polished to an 800-grit resin finish.

provides children in classrooms while maintaining the considerable advantages of concrete flooring. Rubber antifatigue mats can make standing on concrete floors comfortable for cafeteria workers.

The Asthma Regional Council of New England names concrete flooring as a top choice over carpet and vinyl for schools. In the group's 2005 white paper "Health Considerations When Choosing School Flooring," author and certified industrial hygienist Frances Gilmore, M.S., writes: "A number of pollutants that are associated with respiratory illnesses, including dusts, mold and mildew, are captured and can grow in carpets and then get released into the air. Vinyl is also subject to mold and mildew when water pools below it. Vinyl is also the most toxic flooring material to manufacture and to dispose of."

Gilmore gives concrete floors high marks for lower maintenance, higher durability, being better for health and having less environmental impact than carpet and vinyl.

Vocational "shop" classrooms are good choices for concrete floors, says architect Mark Muller, of Treanor Architects, Lawrence, Kan. And concrete floors are always appropriate for janitorial, electrical and other utility spaces — anywhere there could be wheeled traffic or other heavy use.

All these floors, at a minimum, require dustproofing with a hardener/densifier or film-forming sealer.

Areas of concern for concrete floors

While concrete is OK for outdoor basketball courts, Saunders says wood is the best choice for indoor courts — but only because it's traditional.

Kitchens are too spill-prone to make concrete a good floor choice there, he says. Concrete is porous and soaks up all the stuff that gets spilled on it. Juices, vinegars and even milk can etch the concrete. Water repellents and oil repellents can afford some protection, but an impermeable surface like glazed clay tile is a better choice, he says. Even then, the grout needs a protective treatment.

Muller suggests caution when planning concrete floors in school labs where students might handle acids or reagents. Concrete floors in art rooms where dyes and paints could be spilled also merit extra consideration.

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Benefits and expectations

Officials in cash-strapped schools will weigh the cost of grinding and other surface prep against simply putting down resilient flooring, Muller says. But eliminating waxing, buffing and stripping can save schools quite a bit of money over the course of a year, a decade or a bond issue.

That's a crucial step in making concrete floors attractive to school decision-makers, Muller says, many of whom are much more familiar and comfortable with traditional carpet and vinyl flooring choices.

"Be sure to educate the maintenance staff on that point, too," he added. "Some maintenance technicians are of the opinion that if it's horizontal and doesn't have carpet, it should be waxed and buffed no matter what."

Making sure the concrete floor meets client expectations is important for getting additional work, says David Stephenson, co-owner of American Concrete Concepts Inc., Springdale, Ark. The best way to do that is to manage the client's expectations from the start.

"I had a school district superintendent who was paying under $5 a square foot, but who wanted a perfect $22-to-$23-per-square-foot terrazzo finish," Stephenson says. "Instead of telling him right away I could do it, I had the general contractor pour a 20-square-foot sample to the same specs as the 80,000-square-foot slab that was planned."

Stephenson and his crew then ground and polished the sample for the superintendent. Though it wasn't a terrazzo finish, it looked good, Stephenson says.

"We went after it aggressively and exposed a lot of black, white and gray aggregate. The superintendent was extremely satisfied once he understood the process and knew what to expect."

No matter how good the job looked, Stephenson says, he probably would have been in trouble if he hadn't managed expectations by creating the sample. That's because you can't match the image in the client's head unless it's an image you put there yourself.

Environmental concerns

Polished concrete floors have green benefits, some of which are better known than others. Here's one: New concrete is usually produced locally, so a client will avoid the energy consumption required for lengthy transport of heavy rolls of carpet and boxes of tile, Muller points out.

Old concrete subfloors, stripped of worn carpet or failing vinyl, are already there. They don't even demand the limited transport cost of a concrete truck.

Since concrete floors don't need to be replaced, they don't take up space in landfills like other flooring types that have to be removed at the end of their service lives or because of accidents — floods or spills, for example. While many flooring manufacturers offer recycling options for their products, concrete stays serviceable for the life of the building.

All these factors, from durability and low maintenance to health and environmental concerns, make concrete increasingly attractive to school officials in markets large and small.

And that makes schools one more viable market for concrete flooring professionals.

Gary Henry writes about construction issues and practices. He works for Prosoco Inc., a manufacturer of products for finished concrete flooring. Contact him at gary.henry@prosoco.com or call (785) 830-7343.

The Asthma Regional Council's white paper "Health Considerations When Choosing School Flooring," by Frances Gilmore, is available online:
asthmaregionalcouncil.org/uploads/IAQ/HealthConsiderationswhenChoosingSchoolFlooring.pdf

Concrete floors at The Cooper Union, a top architecture and engineering college in New York City, were treated with Prosoco Consolideck LS lithium-silicate hardener/densifier and polished up to an 800-grit resin finish. Steve Zito, Industrial Floorworks, Oceanside, N.Y., did the work.

Photo courtesy of Steve Zito

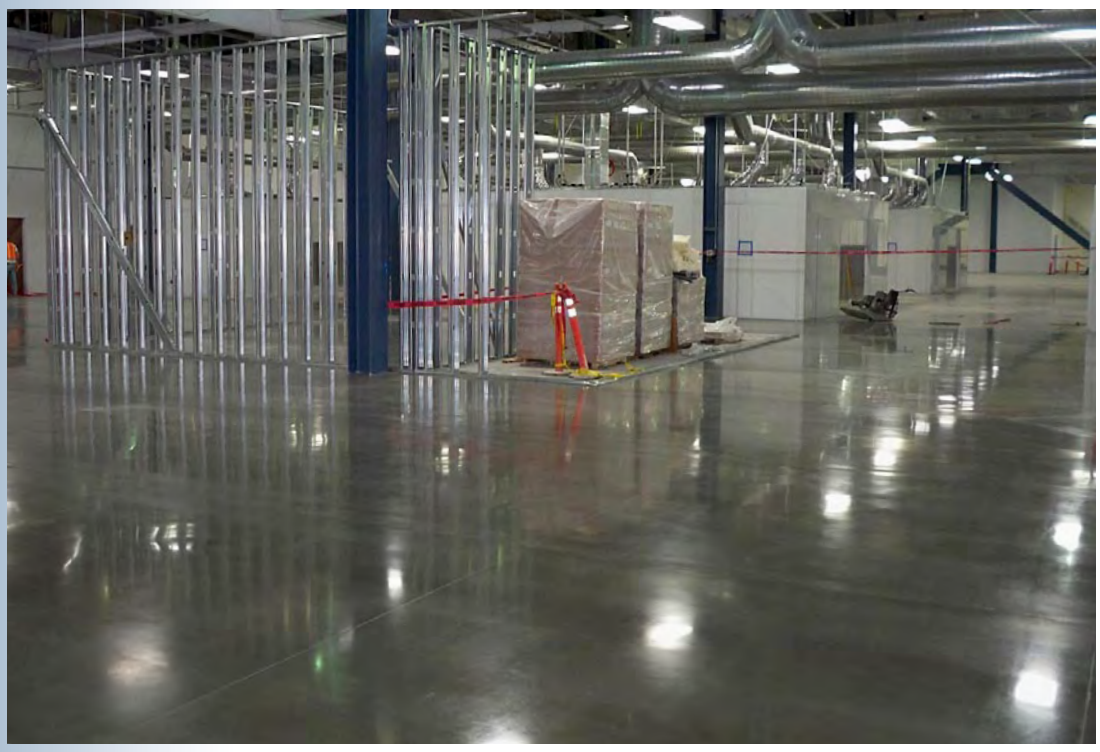

Photo courtesy of Matthew Wicklund, Diacon

The Diacon crew polished Solyndra's Fab 2 floor to a 400-grit finish.

Floors at Solyndra Facility

Contractor: Diacon Inc.

by Stacey Enesey Klemenc

Nothing about the Solyndra Inc. project in Fremont, Calif., was easy or ordinary. And that's putting it mildly.

Solyndra broke ground for its second solar panel manufacturing plant, Fab 2, on Sept. 4, 2009, with a target completion date of July 15, 2010. The new, highly automated, environmentally friendly 609,000-square-foot facility, which offers a clean-energy alternative to oil, will produce up to 500 megawatts per year. The plant will enable the company to fulfill a contractual backlog of more than $2 billion and create about 1,000 new jobs.

To accommodate the manufacturing robots that do the bulk of the work, the floors of Solyndra's two plants must be very flat, level and durable, says Jonathan Williams, president of Diacon Inc., in Manteca, Calif. "We couldn't have any ridges or valleys that would cause them (the robots) to offshoot."

The task at hand was to produce functional factory floors that were also pleasing to the human eye.

Another floor came first

Diacon first came on board with Solyndra when C&L Coatings Inc. of Bakersfield hired it and Contract Installations of Sacramento to expose the concrete in an existing building right around the corner from Fab 2. Both subcontractors had modified Bobcat T250 concrete grinders that could turn over a large amount of square footage in less time than conventional grinders.

From December 2009 until March 2010, the two companies prepped the 200,000-square-foot floor for a RetroPlate install. (RetroPlate materials are manufactured by Advanced Floor Products.) The refurbished area would be where Solyndra employees assemble, package and ship products.

What made this part of the project more complex, Williams says, was they had to break through a very hard topcoat of Stonhard ATK epoxy to expose a very soft mortar bed.

"The first few days were nerve-racking," says Robert Defraia, Diacon's chief financial officer. "We had to

Project at a Glance

Contractor: Diacon Inc., Manteca, Calif.

Client: Solyndra Inc. in Fremont, Calif., a cutting-edge company that designs and makes very thin solar panels and mounting hardware for the commercial roof market.

Project: Polish 270,000 square feet of newly installed RetroPlate flooring in Solyndra's new, highly automated Fab 2 manufacturing plant. The project also included removing 200,000-plus square feet of exposed concrete in the final assembly and packaging area of a nearby existing building in preparation for C&L Coatings Inc. of Bakersfield to install and polish a RetroPlate floor.

Challenge: The Fab 2 portion of the project was put on a fast-track schedule for delivery within 60 days from start to finish. To further complicate the job, the team was asked to finish part of the floor ahead of schedule to accommodate a stage and seating area for a visit by President Obama and California Gov. Arnold Schwarzenegger. Prior to and during the visit, work had to come to a grinding halt.

Problem: Uneven edge troweling and possible moisture variations on the Fab 2 floor resulted in unsightly white spots on and around the construction joints. The Diacon team had to devise a workable process to blend these spots without leaving divots or trenches.

Photos courtesy of Tim Stephen, Contract Installations

At the Diacon job, modified Bobcat T250s were used to remove Stonhard ATK from a slab in a building once occupied by Tandem Computers Inc.

continually mock up new scenarios that required us to lean on every piece of inventory we had."

Every time they thought they had it nailed down, he says, a new section of the floor would prove to need new tooling or a different combination of tooling.

"We had to use a soft-bonded diamond to cut through the epoxy," Defraia says. "Once we got to the mortar bed, we were at the opposite side of the spectrum, needing a hard-bonded diamond. If we didn't adapt the diamonds right, we would have gone through a set of 36 every 5 to 10 feet."

The crews constantly adjusted the diamonds to "what the floors were doing," Williams says, and were able to turn over the floor at a 30-grit resin level without having scarred the concrete.

"C&L Coatings took the floor from this point," he continues, "polishing with their modified polishing machines to produce a beautiful RetroPlate floor that the owner will enjoy for years to come."

Diacon and Contract Installations worked with diamond manufacturers and established a process to successfully break through a hard topcoat of epoxy. C&L Coatings Inc. polished the floor to a beautiful shine.

Fab 2 and fabulous results

After this was completed, Diacon was hired as the prime polishing contractor for Fab 2, installing a RetroPlate floor, stopping at a level 1 finish that Williams says has a shine equivalent to a level 2. Work on the 270,000-square-foot floor began in mid-April and continued into early July. This time, Contract Installations and C&L Coatings were part of Diacon's team. Two crews of eight worked 16 hours a day, seven days a week, to complete the job.

C&L Coatings led the joint-fill operation by preparing the joints and filling with color-matched Metzger/McGuire RS 88, a semirigid polyurea. The custom color match took numerous mockups and owner meetings to determine the final look.

"Our participation goes back almost two years," says C&L vice president Jeff Mosley. "C&L worked with the engineers to

help design the joint layout to mitigate any cracking."

With their modified Bobcats, Diacon and Contract Installations were able to produce 7,000 square feet of finished polished concrete per day, assisting in meeting the fast-tracked, brutal schedule of Redwood, Calif., general contractor Rudolph and Sletten, as well as that of the owner.

"This floor had its own complexities due to the method used to pour the concrete," Williams says. According to plan, the floor area was divided into quadrants and subdivided into 600-foot-long, 10-foot-6-inch-wide strips. The strips were filled with concrete in an alternating pattern — pour, gap, pour — at the rate of four to six strips a day. The infill rows were poured 10 days later, making for cold joints on three sides of each strip and creating the potential for unevenness. Rows had saw-cut joints every 10 feet.

"The concrete company (that poured the concrete) was trying to achieve an ff/fl (floor flatness/floor levelness of) 40 or better — which they did, but at the cost of poor edges," Williams says. When the finishers ran the edge trowel down a joint, it was wet on one side and dry on the other. "This caused a lot of bouncing and created a lot of highs and lows on the edges."

This, in turn, caused a major glitch in the polishing portion of the project — worse than the diamond dilemma — involving unsightly white spots. Williams estimates that 90 percent of the discoloring was caused by the bouncing trowel and the remaining 10 percent by some type of moisture variation. "Stego Wrap was used as a vapor barrier," he says, "but there is some concern that when the stakes were placed for the forming they may have punctured it."

A visit from Obama

President Obama and California Gov. Arnold Schwarzenegger visited Solyndra Fab 2 on May 26. In preparation for this visit, the Diacon team was asked to finish an area of the floor ahead of schedule so the stage and seating could be placed.

"That really threw a monkey wrench into the scenario," says Jonathan Williams, president of Diacon Inc., adding that the Secret Service showed up May 22 and began setting up security. "We were the last crew there, cleaning the floor until about 2:30 in the morning. The president gave his speech about 10 a.m. but we weren't allowed to attend. By 1 p.m. our crew was back in there and going again. We were grinding while they were disassembling the stage around us."

During the presidential visit, Williams says, Diacon and Contract Installations' Bobcats served a federal purpose of their own: They were placed as barriers at the main entry.

Photos courtesy of Matthew Wicklund, Diacon

Whitish areas around the construction joints.

A water-based antique gray stain from Smith Paints turned out to be a perfect match for blending the whitish areas with the concrete.

Adrian Henry, Diacon's vice president of operations, says that when going into the project they noticed the whitened areas surrounding the construction joints, about 4 to 6 inches on each side. The crew used a 32-inch walk-behind to address any crowning issues that may have happened during the curing process, then continued to polish with the Bobcat. "Once we polished up to a 400 grit, these areas became more profound," Henry says. "We addressed this with the owner and general contractor but they didn't want to hear about any issue. They just wanted us to fix it."

So Diacon tried a number of things, which included using a 50-grit metal-bond diamond, first on the 32-inch walk-behind and then on the edger. "Once we found the right tool for the application, we changed the process a little and got good results," he says. They followed this procedure with a 40-grit metal diamond down the center of the joint, overlapping the work the edger had previously done.

Next, the crew continued polishing those areas with the Bobcat and brought the floor up to a 400-grit finish. They cleaned the floor, applied RetroPlate densifier and let it dry. They cleaned the floor again. Some spots were glaringly still there.

They tried torching the area to get the moisture out, grinding deeper and using an efflorescence remover, a gray dye and guard darkening.

Finally, they applied a Smith Paints antique gray water-based stain to an area that had some cream showing. "It darkened it up and the color matched the floor," Henry says. "The blend was almost perfect."

They let the stain dry and then applied three coats of AFP's RetroGuard, burnishing between each coat with a high-speed burnisher using an 800-grit diamond-impregnated pad. Eureka. They had found it.

"Solyndra was happy with the results," Henry says, "but it took a lot of thinking outside the box. It certainly wasn't your typical way of doing polished concrete."

www.diaconcrete.com

Diacon's modified Bobcat T250 concrete grinder didn't just help with the Solyndra project. It also served as an entry barrier during President Obama's visit to Fab 2 in May.

Myth-Perceptions, Part One: Setting Up For Success or Failure

What is a myth-perception? Can it be only one person's perception, is it a truth, or is it purely a means to saddle the competition with a hurdle or diversion — intentional or not?

by Peter Wagner

The one universal truth about the polished concrete industry is that, sadly enough, there is no universal truth. We don't agree about what defines polished concrete, what steps are important, or what is the best way to steer the industry. In fact, we have quite a bunker mentality. From my perspective I'd like to identify, to bring out in one forum, some of the basic building blocks of polishing, and to examine them in terms of myths or accurate perceptions. I will try to address each subject in sequential order.

(Note: Whenever I refer to polished concrete, I am referring to a concrete floor that has been ground, polished and chemically densified.)

Flatness: It's simple — how much the flatness of a concrete slab will affect your final floor is dependent on end use and visual expectations. Floor flatness creates a starting point for your work. It's your canvas. Is flatness required for proper and safe operation of equipment, such as a high-cube warehousing operation? Is it simply a demand of the architect and/or end user for visual appearance? What control do you wield in all of this? With an existing floor, your starting point is out of your control, it's a crapshoot, but with a new pour and with prior knowledge of the floor's end use, your degree of control is dependent on your willingness and ability to insert yourself into the planning stages.

Curing method: The effect of a cure will be dependent on the methodology, along with the subsequent steps you will be taking. Fifty percent of the water in a portland cement concrete mix will come out of the mix through the hydration process that occurs during curing. Controlled curing/hydration will create more level, consistent concrete in performance and appearance. Curing can be controlled through additives, coatings, or simply water. This control is a dominant factor in the elimination of edge curl, cracks that occurs when hydration is not equalized throughout the slab, or crazing, when the slab isn't protected from air movement across the surface. However, each method will have a different effect on your ability to perform.

- Wet cures — Wet cures create a very dense, consistent floor surface. While they eliminate the need to remove a coating, they can make opening up the cap very difficult, along with interfering with dye

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or stain penetration. Are you aware that you will never receive a denser, more tightly consolidated floor than one that has been water-cured?

- UV-dissipative cures — A simple statement: Dissipative cures do not receive enough UV exposure to break down on a project that is totally roofed in.
- Solvent-based cures — Do you have a VOC issue? Will you be able to remove it all so it doesn't cause a barrier to penetration of densifiers and dyes?
- Wax-based cures — Make sure you have warm water handy, as sanding may remove the surface wax but not the wax that has penetrated the pores.
- Plastic sheeting — A positive choice for holding in the moisture. However, any contact between the plastic and hydrating slab will leave permanent darkening at point(s) of contact, and if wood or metal is laid out to keep the plastic in place, expect permanent shading of those areas, or even worse, rust or tannin stains if they are placed underneath the plastic.

Aggregate exposure: Remember, it's just freaking concrete. You cannot simply set your machine down on a surface, grind through two or three metal steps, and voila, you have a beautiful terrazzo-looking floor. During the troweling phase of concrete finishing you are actively pushing the aggregate down into the mix, while at the same time pulling up and consolidating the fines at the surface. If your customer wants an exposed aggregate finish, or poor man's terrazzo, you either have to make allowances to your mix design and finishing process or seed the surface. Either way, if your perception and that of the owner or architect aren't similar, you may learn an expensive lesson.

Densifiers: Plain and simple: You can polish without densifying, but you don't receive the increased hardness, repellency and elimination of natural dusting that occurs with concrete unless you chemically densify. Plain and simple.

Equipment and diamond pairing: A + B = C ? The number of variations possible when pairing grinding equipment and diamonds is exponential. Each piece of equipment differs, not only as to whether it is a planetary or nonplanetary grinder, but also in weight and configuration, or whether it's run wet or dry. Pretest your pairings prior to starting a project because a diamond that works on Manufacturer A's 30-inch machine may not work as well on Manufacturer B's 30-inch machine. If you are using multiple equipment manufacturers on a project make sure that Grinder C can remove the scratch pattern created by Grinder A.

Clarity and shine: Clarity and shine are both present on every floor that you polish, or are they? You can achieve surface shine without having achieved floor clarity, and you can achieve clarity without having a high shine. Are they independent in the grinding and polishing process? Clarity is achieved in your initial low-end grinding stages

when you are removing the laitance and irregularities that are natural in concrete. You are creating a clean, consistent surface on which you can then craft your shine, your polish. But buyer beware. Is that shine completely mechanical, or is part of that shimmer created by melted resins, and if so, will it wear and dull with traffic?

Trowel marks and stun marks — why can I see them, but not feel them? There are similarities in these markings, but they occur at different stages. Trowel marks are created by excess and uneven pressure on the blades of the trowel during the final finishing steps of a concrete pour, while stun marks are created by excess pressure on the diamonds by the grinder during initial cutting stages, particularly with metals.

Photo courtesy of FGS/PermaShine, L&M Construction Chemicals Inc.

Harvey Construction, in Snohomish, Wash., completed this job at The Commons, on the Microsoft campus in Redmond, Wash. The FGS/PermaShine system from L&M Construction Chemicals Inc. was used, along with Deco-Pour water-based dyes, all covering 60,000 square feet.

Trowel marks are generally easier to understand because you can see the action that creates the marks, but stun marks are not as easy to visualize. An analogy for stun marks might be the effect of a woman's high-heel shoe on a marble floor. The extreme pressure caused by all the weight bearing on a stiletto heel (1,600 psi for a 100-pound women on a quarter-inch-square heel) will cause stun marks on the marble. These marks can be seen, but when you run your hand on the floor they don't present a physical profile to feel. What has happened here is similar to what happens when excess weight and pressure bear down on a metal diamond in the early grinding stage — it cause subsurface crystal damage that can be seen, but not felt. This is apt to happen more often on uneven floors where you're having to run your head speed at a lower rate, thus allowing more torque on the individual heads.

Does each successive diamond step tightens the floor? No. There is simply no myth that is so greatly perpetuated, yet so wrong. In understanding the pore structure of concrete, it is imperative you know that the pores are neither uniform in shape nor in placement throughout the slab. In Grinding 101 we learned about scratch patterns and how each successive diamond lowers the scratch profile of the previous diamond. This action DOES NOT TIGHTEN THE FLOOR. It merely eliminates some pores, while at the same time opening or exposing new pores. It is true that as you grind and polish, you are minimizing exposed surface area, but your diamond steps do not tighten the floor.

My next column, "Myth-Perceptions: Part Two," will focus on methods, densifiers, decorative dyes and acid stains. If you have any comments on Part One, or you can think of areas you would like covered in Part Two, please e-mail me at pbwagner@comcast.net.

Peter Wagner has been involved in the polished concrete industry for the past decade, both as an applicator and as director of marketing and training for several densifier and dye manufacturers. He is currently working with Deco-Pour and Revolutionary Concrete Chemicals, helping bring water-based concrete dyes and a polished concrete cleaner to market. He may be reached at pbwagner@comcast.net.

The Mission of Our Organization

It is my personal belief that you must know and understand the limitations of your products, business and skills to be successful in any trade, but most especially in the polished concrete industry. Each job brings a unique set of challenges to the polishing process. Understanding what concrete is, how it is placed, and the many variations that can take place from region to region are just a few of the crucial steps when specifying or contracting. Often, the customer is sold a product from a picture and doesn't understand the complex issues involved in making that product materialize. Although our industry parallels the wood flooring and natural stone trades, we are not dealing with a manufactured product. Each project is hand-crafted on-site and goes through many environmental and mechanical challenges before the end.

by Brad Burns

While we may not be able to control many of the variables related to concrete and the polishing process, we are able to expand our threshold of personal and business limitations. We do this every day by learning from either our own mistakes or those made by others (and some can be rather costly!). Gaining knowledge from reputable resources is always a valuable investment. Networking with other contractors and getting feedback on major issues and processes can also be extremely valuable.

The Concrete Polishing Association of America strives to fill this void in our industry. We are constantly looking at ways to better inform the contractor, architect, designer, general contractor and consumer of the benefits and limitations associated with polished concrete. We offer monthly training classes that go far beyond the basics and help teach the mechanics of the polishing process. This equips the mechanic with the knowledge to adjust to the changing variables at the job site. We have also accumulated a glossary of terms to assist with communication and understanding of the products and processes.

But that is just one aspect of what the CPAA is doing for the industry. As a business owner and polishing contractor, it is comforting for me to know that there is an independent, nonbiased organization that shares my concerns at the job site. What I mean by that is this: With the onset of "industry standards" involving procedures and methods, I don't just have Mr. I.E. Smith (I.E. stands for Internet-educated) trying to tell me, the trained professional, how to polish a floor. Instead, I have a general procedural outline to follow, designed by other quality contractors who have

been through the turmoil and job-site issues and emerged on the other side wiser and willing to share their experience. I also have a formal organization to refer to when there are questions concerning job-site procedures. The CPAA is a resource for architects, general contractors and polishing contractors to alleviate job-site practices that are detrimental to the polished concrete industry and/or the final product for the customer. The common goal of the CPAA and the contractor is to ensure the customer gets the best quality possible and the final product is properly processed to offer exceptional performance.

Contractors that I have talked to want to do their best for the customer. Some are better equipped than others in equipment, business practices, talents and experience. But nonetheless, they all want the same thing — a happy customer that will refer them for future work.

I think it's about time that we combine our efforts and resources to support the CPAA. We need to work together to ensure we have mechanical and ethical standards for everyone to follow. Together, we can ensure that polished concrete will be a viable alternative to traditional floor coverings in the future.

The CPAA is growing to meet the demands of the industry. We have already posted a Commercial New Construction concrete polishing specification on our Web site. Within a few months, we will add Residential New Construction as well as several versions of renovation specifications. Members who want to be a part of leading the industry are urged to roll up their sleeves and pitch in. The CPAA is not an organization for the elite contractor, but it helps the contractor become elite.

Where are we going? We are forging a path for others to follow that will lead to a sustainable industry.

What are we doing? What must be done to ensure the future of our industry. The only other question is, who is willing to help?

Brad Burns has 28 years experience in the flooring industry. He is president of First American Floor Co. LLC, a family-owned business providing floor coatings, coverings and decorative concrete in Texas, Louisiana, Arkansas and Oklahoma. He also serves as president of the board of directors of the Concrete Polishing Association of America. He strives for quality and continued education in the concrete flooring industry. He may be reached at brad@polishinginstitute.org.

The Importance of Managing Expectations

by Josh Vander Veen

Possibly one of the most-discussed topics in the concrete polishing industry today is managing the customer's expectations. Many an instance has occurred in which the floor has been ground, honed and polished within a hair's thickness of perfection in the contractor's eyes, only for him to be informed at collection time that it isn't what the customer had in mind. The workmanship and quality of finish may be the bee's knees, but if it isn't how the customer envisioned it, then you have not delivered on expectation.

There are many ways for you to manage the expectations of customers. Quite frankly, if you have been unable to collect on more than a few jobs due to this issue, then my advice would be that this part of your business needs urgent attention — stick this at the top of your next-30-days priorities list, because 90 days is probably too long to wait.

A portfolio of your previous completed works is a great place to start. This shows prospective customers what they can expect as a typical outcome, and it also shows what you are capable of delivering. If you don't have a lot of your own pictures, ask any of your friends in the business if you can include some of theirs, but be sure to be upfront with your customers and let them know those pictures are not your work, just an example of what is possibly achievable with their floors. Show them the ugly stuff too — there is an element of risk and they should be aware of this before proceeding.

When possible, complete an on-site mockup so the customer can make a judgment call on whether to proceed with the process. You can do these for free, or you can charge for them if the project doesn't go ahead. You determine what best suits you and your approach. This will also give you an idea of whether you wish to proceed as well as give some indication of the best way to tackle the project.

Compile a checklist for you (or your salesperson) to incorporate into your sales process. It should include things such as:

- Customer understands polished concrete and its limitations — check.
- Customer has seen our portfolio and has acknowledged level of workmanship is sufficient in reference to scope of works — check.
- On-site mockup performed as indication of expected outcome. Customer has inspected mockup and acknowledges it is an indication of expected outcome — check.

Of course there are many things you can add to the checklist to ensure that you have done your job of informing the customer to the best of your ability, clearly highlighting the possible variations in the final finish and so on. When the checklist is complete, have the customer sign it in acknowledgement.

Also include a post-completion section to the checklist and have the customer sign it upon completion acknowledging that they are satisfied with the works carried out. You can write something yourself, but if this is not your strength, you can have a list compiled by a solicitor at a price. Whichever way you go, it is a good thing to have, as you will know you have fulfilled your part of the deal on all possible fronts and they have formally acknowledged so. This will not promise you that you will get paid in a timely manner in full. However, it will certainly bolster your position should you have any issues collecting your hard-earned payment.

Of course, there are many more tools that you can utilize to maximize your performance, but I believe there are books and seminars for that.

At the end of the day, if you feel you have sharpened every tool that you have and you are convinced the spec in front of you merits a higher price, then it is possible that the customer is dreaming. Don't be afraid to pick up the phone and speak with representatives of the companies in the specification in front of you for additional information. Their customer may have misconceptions of the cost and process involved. They also may have selected the wrong process for their budget.

Worst-case scenario, if you know the bid is too low for you to compete, walk away. Chances are, if everyone does the same thing when they see the low bid, the market will respond accordingly.

Josh Vander Veen is sales/product manager, surface preparation, for Husqvarna Construction Products. Reach him at josh.vanderveen@husqvarna.com.au.

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