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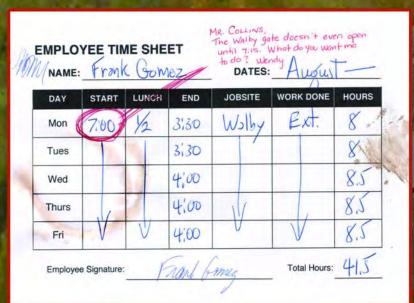
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Tue	8/17	7:21 AM 12:37 PM	12:06 PM 3:42 PM	Formwork Formwork	4:45 hours 3:05 hours	7:50 hours
Wed	8/18	7:16 AM 12:33 PM	12:04 PM 3:44 PM	Formwork Formwork	4:48 hours 3:11 hours	7:59 hours
Thu	8/19	7:18 AM 1:05 PM	12:25 PM 3:42 PM	Texture/Seal Texture/Seal	5:07 hours 2:37 hours	7:44 hours
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Dear Readers.

■alk about being busy! At the present, we have to cap it off, we're six weeks away from completion on a newly constructed home — cross your fingers! In the life of a publisher, deadlines are bittersweet. Oh, did I mention that I'm doing the painting and concrete work myself, along with some good friends?

sold our home and need to be out of it by Sept. 3. My wife is due Sept. 1 with our third child. And All these activities, along with keeping up to speed

with the daily operations of Concrete Decor, are the chaos we've endured ever since the beginning of this magazine. The point I'm trying to make is this: In spite of all these projects, I've made it a point to take the time to participate in learning opportunities, and I just completed two back-to-back seminars at the Institute for American Craftsmanship (IAC), here in Eugene, Oregon.

Last week, Concrafter (a third-generation concrete company from Arizona owned by the Hunsaker family) conducted an informative and insightful seminar for contractors. Aside



from the fact that the Hunsakers are outstandingly good people, what I enjoyed most in this learning experience was the demonstration that beautiful concrete finishes can be achieved with relatively little added cost to customers. Concrafter's tools and techniques equip contractors for offering customers cost-effective decorative solutions with concrete installations and stampable overlayments.

Coming right behind this class was a "Flattoo" workshop with Tamryn Doolan of Surface Gel Tek. If you're still wondering how such a word can be synonymous with concrete, give it a try. You'll undoubtedly walk away from the class with a whole new perspective and set of tools for decorative concrete applications. With Surface Gel Tek's patented technologies, the design possibilities are endless. Also, their products are backed by excellent customer support. Did I mention that Tamryn

was an air traffic controller during the Vietnam War? OR the fact that she wrote the ASTM -D4260 standard for Concrete Surface Preparation? Such a background gives me the confidence that you won't get steered in the wrong direction. Indeed, many of the nation's leading artisans in concrete are using Flattoos and reporting excellent success.

Let me make one suggestion in light of everyone's busy schedules. Take every opportunity to involve yourself in educational opportunities. They are personally rewarding, oftentimes relaxing for our body and soul, you meet great people, and you return to your hectic life a better person. And with more to offer! Education and training are undeniable means for achieving your personal and professional goals.

Make time to seek out similar opportunities in your area or ask your local supplier to investigate the possibilities for these kinds of classes in your area.

At Concrete Decor, we remain focused on your success.

Sincerely,

Bent Mikkelsen, Publisher







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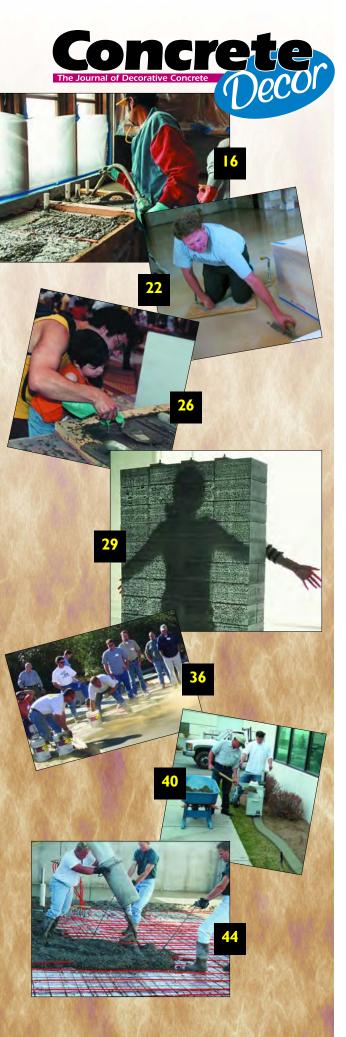
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ON THE COVER: Workers install tubing for an exterior hydronic radiant heat system. Photograph courtesy of Watts Radiant.



Contents

FEATURES

16 Cast-in-place Countertops

Casting on-site: part one of a two-part countertop series covering forms, mixes, tools and finishes.

by Susan Brimo-Cox

22 Troweled Overlays

For creating decorative floors with a handcrafted feel, the trowel is hard to beat.

by David Thompson

26 Celebrating Concrete

A new exhibit at the National Building Museum celebrates the versatility and beauty of this enduring building material.

by Stacey Enesey Klemenc

29 Wave of the Future

Concrete you can see through? You bet!

by Stacey Enesey Klemenc

32 Portable Mixers

Owning your own mixer allows you to pour when you want, where you want.

by Jeff Woodard

40 Landscape Curbing

With the right equipment, you can offer this increasingly popular decorative concrete application.

by John Strieder

44 Radiant Heat for Decorative Applications

What could be better than a concrete floor? One that stays warm in winter.

by John Vastyan

DEPARTMENTS

12 CONTRACTOR PROFILE: Carlton Concrete

From national TV to a new 5,000-square-foot showroom, this decorative concrete company's work will be getting plenty of exposure.

by Stacey Enesey Klemenc

36 MANUFACTURER PROFILE: Rafco Products

A pioneer in creating products for decorative concrete applications, Rafco Products continues to grow and innovate. by Bruce Hackett

- 56 FOCUS ON EDUCATION: Cheng Design now offers five-day design workshops that will help you build a high-end countertop business.
- 64 FINAL POUR: Concrete floats my boat!
- 54 Classifieds
- 49 Concrete Marketplace
- 4 Decorative Concrete Tips
- 6 Industry News
- 10 Industry Spotlight Association News
- 60 Product News
- 52 Product Profiles
- 2 Publisher's Letter

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We look forward to hearing from you!





Using a Grid to Transfer Art to Concrete Cave paintings come to life again in Santa Cruz

received a call asking if I'd do a concrete patio, so I set up an appointment and went to meet the client at his home in Santa Cruz, Calif.

His home borders a greenbelt on the back of the yacht harbor. While I was there, I heard all the waterfowl and felt how primitive the sight of the greenbelt was. I thought it must have looked the same for thousands of years.

That night I had an idea. I looked up "cave drawings" on the Internet, and found a cave in France with the most beautiful cave art done 20,000 years ago. I printed several of the drawings and made a 4" scale of the patio, which I presented to the owner the next day.

He loved the concept, asking, "You can do this on concrete?"
I joked: "Well, I am a concrete contractor and we haven't evolved all that much from the caveman... and I do have a better stain."

I went to work laying out a 2-foot square grid on the concrete, using the ¼" plan I had made.

The grid is one of the oldest methods known for copying artwork. I can copy whatever I want on the concrete. I can reproduce any size, shape, or pattern. The more intricate the pattern, the closer I make the grid.

I first draw lines on my plan, using the ¼"-per-foot scale. I like to use ¼" because most of the buildings' plans are done to ¼ scale.

I then transfer the lines to the concrete and connect the dots.

When working with a set of building plans, I use a sheet of velum paper to copy the rooms I intend to stain. I then design and color each room. You can find marker pens at any art supply store that will give you the feel of stain.

I find this very helpful in presenting the design. Most people feel more comfortable if you show them what you have in mind. It's so much easier to change the design on paper ...

If you're just starting out in the biz, have fun with it. Trust your passion and inspiration. Try to always be clear with your customer, and remember one thing ... we all see color in different shades.

Dave Pettigrew, owner Diamond D Concrete Capitola, Calif. www.diamonddcompany.com





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Industry News

Stamping guide due out in fall

Bob Harris' Guide to Stamped Concrete, the second book in the Bob Harris Decorative Concrete Collection, will be released in October, 2004. The full-color, fully illustrated guide provides concrete contractors with detailed information and practical tips for stamping concrete.

The book shows contractors where to find good stamped concrete designs; the five methods of imparting color to stamped concrete work; placing the concrete to facilitate stamping; and a complete, illustrated description of the entire stamping process from A-Z.

The guide also covers topics of vital importance for anyone planning to stamp concrete, including: maximizing your profits by knowing what to charge for stamped concrete; concrete mix considerations; site conditions affecting stamped concrete work and how to prepare or avoid them; important issues to avoid when stamping; fixing minor flaws in stamped concrete work; and effective techniques for the application of sealers. With more than 25 years experience in the construction industry, Harris has conducted handson training seminars in architectural concrete in locations around the world, and has personally placed and/or supervised the placement of over three million square feet of decorative concrete, including work for some of the major Disney theme parks in Orlando, Florida. As president of The Decorative Concrete Institute, he offers hands-on training and workshops in the latest decorative products and techniques. For more information, visit www.bobharrisguides.com or contact Lee Ann Stape at (877) 324-8080.

Colorado Hardscapes fills two key positions

After 32 years with concrete contractor Colorado Hardscapes and 10 years in charge of production, John Buteyn has moved to a new position

Cement Shortage Takes a Bite out of Business by John Strieder

Got cement? As of July, contractors are still saying, "No!"

Strong demand and international demand for space on cargo ships have combined to create a concrete shortage in regions throughout the United States. And the crisis shows no signs of abating soon.

The Associated General Contractors of America is forecasting huge price increases, citing a report from the Precast Consulting Services Management Bulletin that predicts cement prices will jump by as much as 15 percent to 20 percent over the next few months. "Cement shortages and unexpected higher prices have the effect of delaying construction projects and adding to the cost of those projects," says AGC president James D. Waltze.

Robust residential construction is driving the cement shortage, according to a report issued in June by the Portland Cement Association. Shortfalls have cropped up in 23 states in the Southeast, Southwest, New England and Northern Plains. The shortage was first reported in Florida, and California and New York are also affected.

Ed Sullivan, chief economist for the Portland Cement Association, says the crisis may well extend into the fourth quarter of 2004. "I don't think anyone knows how long it's going to take," he says.

Several factors could bring relief as the year wears on, Sullivan says. For one, rising interest rates could ease demand for cement from the residential sector. "I think residential demand is going to cool off in the second half of this year," he says, "but a lot of people don't agree with me."

Also, China's net export rate may slow, freeing up ship space for cement orders to the States. Chinese officials are scrambling to curb their country's economic growth to keep its economy from overheating, Sullivan says. "They are really concerned about inflation."

Freight rates have recently dropped, he notes, which may be a good sign. But will the drop be sustained? He doesn't know. And he knows of no plans to put more ships in the water to ease the crunch.

Meanwhile, contractors have to face wait times, Sullivan says. Big orders, such as for public works projects, are prioritized while residential contractors get pushed aside, he says. He's heard stories of jobs put on hold for days or even weeks.

Janine Flynn, COO of SuperStone Inc., a Florida-based manufacturer of concrete products, says her company is stockpiling cement. "A lot of local companies use the same concrete company," she says. "So what they're doing is giving the concrete company a schedule a month in advance, and they're not having any problems."

Companies who do small-volume business with concrete suppliers are hurting, she says. "Concrete companies are not going to supply anybody new, while regular customers are being taken care of," she says.

A big contractor can coordinate an order far ahead of time with its ready-mix supplier, agrees Sullivan. "But for small guys working with small volumes, I really don't know what they can do."

Well, actually, he does have one idea. "Make sure you have a good relationship with your ready-mix supplier," he says. "I know some ready-mix people who say, 'If we pull teeth to get the bill, you've got to wait in line.' Another guy — ordering the same volume, but pays the bill on time — moves to the front of the line."

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within the company: senior technical manager. John's past experience as production manager included such highly visible

jobs as The Aurora Justice Center, The Broadmoor Hotel, Aspen Grove Lifestyle Center, and most recently Stapleton City Center and Belmar. His responsibilities include product development, quality control and technical liaison between product suppliers and installers.

The position of chief operating officer will now be filled by Andrew

Fox, former vice president of TruGreen Companies. Andrew has 20 years of green industry management experience. Besides



overseeing production, Andrew is spearheading new software implementation for Colorado Hardscapes. John Buteyn and Andrew Fox can be reached at (303) 750-8200 or info@coloradohardscapes.com.

Lafarge names new president for Northeast cement region

Lafarge North America has named Claude Bastien as president of the Northeast Region for the Cement Division. He previously served as president of Lafarge Construction Materials for the Eastern U.S. Region. Bastien will be based in the regional headquarters in Montréal, Québec, where he will oversee the production, sale and distribution of cement, slag and fly ash in the Northeast Region. It includes the Canadian provinces of Québec, New Brunswick, Nova Scotia, Prince

Edward Island, and Newfoundland and Labrador, as well as eleven U.S. states, including New England and Mid-Atlantic States as far south as Virginia. He will also be responsible

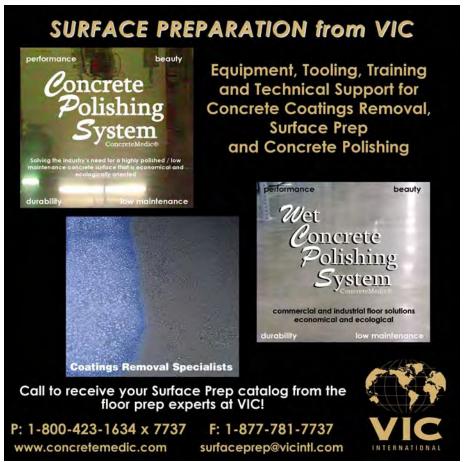


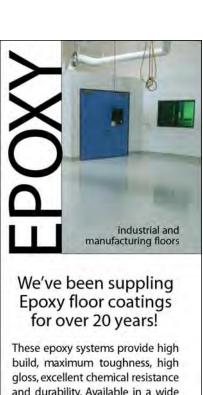
for the region's four cement plants, located in St-Constant, Québec; Ravena, N.Y.; Whitehall, Pa.; and Brookfield, Nova Scotia; as well as Lafarge's

slag cement manufacturing facility at Sparrows Point, Md.
He began his career at Lafarge in 1991 in Montréal as the vice president and controller for the Northeast Cement Region. Before joining Lafarge, Bastien worked in the railway, automotive and telecommunications industries in Canada and overseas.



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CIRCLE #53 ON READER SERVICE CARD

Industry Spotlight

Association News

PORTLAND CEMENT ASSOCIATION

Reference guide now available in Spanish

The Portland Cement Association has introduced *Diseño* y Control de Mezclas de Concreto, the Spanish edition of its premier publication, *Design and Control of Concrete* Mixtures.

The Spanish edition includes information on construction practices and standards used in Latin America. This manual covers numerous topics on the most widely used construction material in the world, including materials, mixing, placing, testing, and new developments.

A version of the manual is also available on CD and includes links to cement and concrete resources on the Web and metric conversion. The entire book is indexed and can be searched using keywords or phrases. The publication is available online at www.cement.org/bookstore or by phone at (800) 868-6733. Cost is \$50.

AMERICAN CONCRETE INSTITUTE Book celebrates concrete structures worldwide

Concrete: A Pictorial Celebration, a new book from ACI, commemorates milestone achievements in the concrete industry and celebrates the utility and beauty of concrete for all applications, whether serving the needs of earth's inhabitants or inspiring awe as an architect's medium for expression. This hard-cover, coffee-table book is a tribute to architects, engineers, concrete producers, constructors and artisans who bring concepts to life. The photos show concrete structures ranging from residential foundations to edifices recognized around the world, and illustrate the American Concrete Institute's purpose of "advancing concrete knowledge." It is packed with over 250 pages of full-color photos of structures that benefit from the strength, durability, and economy of concrete, and instills a sense of pride in all who are part of the concrete industry. For more information, visit the American Concrete Institute's online bookstore at www.concrete.org or call (248) 848-3800.

Centennial Convention coming up in October

The American Concrete Institute will hold its upcoming convention in San Francisco, October 24-28, with the theme: "Concrete — A Century of Innovation."

The convention will feature special events to continue the year-long celebration of the Institute's Centennial anniversary, including a bay cruise aboard the 292-foot San Francisco Belle. Over 250 meetings are planned, 35 technical sessions are being offered, nearly 100 students are coming to participate in the concrete cube competition and hundreds of exhibitors and attendees are expected to fill the exhibit hall each day.

To learn details about the upcoming convention in San Francisco or to register, call (248) 848-3800 or visit www.concrete.org.

NATIONAL READY MIXED CONCRETE ASSOCIATION

Concrete promotion team beefed up

The NRMCA has reinforced its concrete promotion team with two additional national resource directors. This brings the total field promotion staff to five, with each promoter responsible for national accounts and regional promotion activities in a specific section of the U.S.

Industry veteran Vance Pool brings his more than 20 years experience in the building materials industry to the south-central region. He has worked for SI-Concrete Systems, Grace Construction Products and Lafarge North America. John Colby, based in Worcester, Ma., will be responsible for New England as well as New York, New Jersey, Delaware and Pennsylvania. He has almost 20 years of experience in the industry as a district manager and engineering group representative for Grace Construction Products.

Brad Burke, based in Minneapolis, Dan Huffman in Portland, Ore., and Mike Zaldo in Atlanta round out the staff of field promoters.

Course certifies plant managers

Responding to industry demand, the NRMCA has created a plant manager's certification course. The course is the only one that is specifically designed for plant managers of ready mixed concrete production facilities. A certification exam will validate the specific skill levels needed in these areas. Course instruction will cover plant safety, operations, product knowledge, environmental and business concepts. Course participants who successfully pass the product knowledge portion of the exam will be certified as plant operators; those passing all sections of the certification exam will be certified as ready mixed concrete plant managers.

INTERNATIONAL CONCRETE REPAIR INSTITUTE Fall convention will be held in San Francisco

The ICRI will hold its 2004 Fall Convention at the Hilton San Francisco, in San Francisco, Calif., October 20-22. The convention theme is Structural Enhancements and will consist of technical presentations, committee meetings, tabletop exhibits, networking opportunities and special events.

ICRI will open the convention with a luncheon and general session titled "Invest in the Best —What it Takes to be Number 1," which will feature a documentary on the life of undefeated heavyweight champion Rocky Marciano, hosted by his brother, Lou Marciano. Marciano will also be on hand to award one lucky winner a pair of boxing gloves autographed by boxing great Muhammad Ali, raffled by the ICRI Marketing Committee.

The convention will also play host to the 12th Annual ICRI Awards Banquet, which will celebrate the ICRI Repair Project Awards and 2003 Chapter Awards, and close with a sunset cocktail cruise on San Francisco Bay hosted by the Northern California Chapter.

For more information on these and other ICRI events, visit www.icri.org or contact Chris Jorgensen, marketing/chapter relations coordinator, at (847) 827-0830.



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CIRCLE #27 ON READER SERVICE CARD

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Contractor Carlton Profile Concrete,



Visalia, **California**

by Stacey Enesey Klemenc

oug Carlton says he tried his darnedest to stay out of the decorative concrete market. With both his father and grandfather traditional concrete contractors, he was quite content to maintain the status quo when he started his own company back in 1987. But so many clients kept asking for colored and "printed" concrete that in 1992 he "took a leap of faith" and entered the decorative realm. "It was the right move at the right time," he says.

Today, in addition to the basics, Carlton Concrete offers three core services — concrete stamping, staining and overlay.



When he started flirting with the prospect of offering stamped concrete, he cut his first eight to 10 customers great deals. "If I had a patio that was going to be a broom job, I'd offer to stamp it at the same price," he says. "This allowed me and the crew to learn on the job, to gain experience without a huge weight on our shoulders. It really took the pressure off."

If there was one thing he learned then that still rings true today, it is that you've got to realize you aren't going to produce a flawless creation. "It's impossible to do perfect work day in and day out," he says. "This line of work is meant to have imperfections. It's not about going out and trying to do a perfect job. It's about fulfilling the expectations of the client."

He urges newcomers to the business to start off with a small project and take good pictures of the perfect areas and the imperfect areas. "Show them to everybody you can," he says. "People relate to visuals."

That's the reasoning behind his latest business venture, a 5,000-square-foot design center that should be completed next spring. "People need to see decorative concrete, to feel it under their feet. They need to be able to visualize a mocked-up room and to see how it will fit into their home or office," Carlton says.

Plans for the center include outfitting four offices with different treatments that will illustrate stamping, staining and overlay possibilities. Outside, there will be a fully landscaped area with different forms of stamped concrete so people can see what concrete will look like as it weathers and wears. Showing clients only newly placed concrete is like showing a bride only on her wedding day, Carlton says. "It's just not a realistic picture."

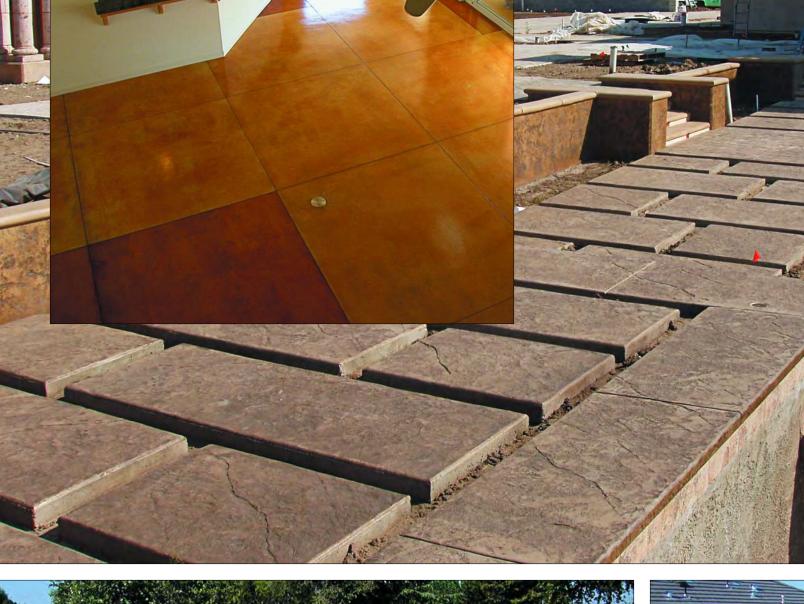
The showroom will also feature two finished floors that have one major difference: One is properly maintained and one is neglected. That way, customers can see the difference between the two and understand why some surfaces need to be periodically resealed.

Along with examples of decorative concrete, Carlton says, he will take advantage of today's computer software. Customers will be able to meet with a designer who will input details into the computer to generate a sketch or blueprint of their project. "This way they'll get a feel for what they like by seeing an overlay of different colors and patterns. They'll leave with a little sketch to take home."

And whereas variety is nice, Carlton notes, you don't have to go overboard. "Most people will















pick from what they see and will buy from what you show them. We have maybe one client a year that will ask for something they've seen that we don't have."

Of his stamping tools, he says, "we only use nine different styles and we tend to use the same three patterns weekly," textured stone, ashlar slate and random stone. "There's such a learning curve with stamping, and it's best not to try to master too many things. My decorative crew becoming comfortable with different styles of stamp mat and application has been the key to multiple successful jobs. They're the reason for our success."

Education, too, is important. "There are a lot of people who want to get into business, but there's a huge deficit in training and education," Carlton says. "There's a big difference between knowing how to do decorative work and doing the actual job."

Carlton certainly doesn't regret taking the leap into decorative concrete.

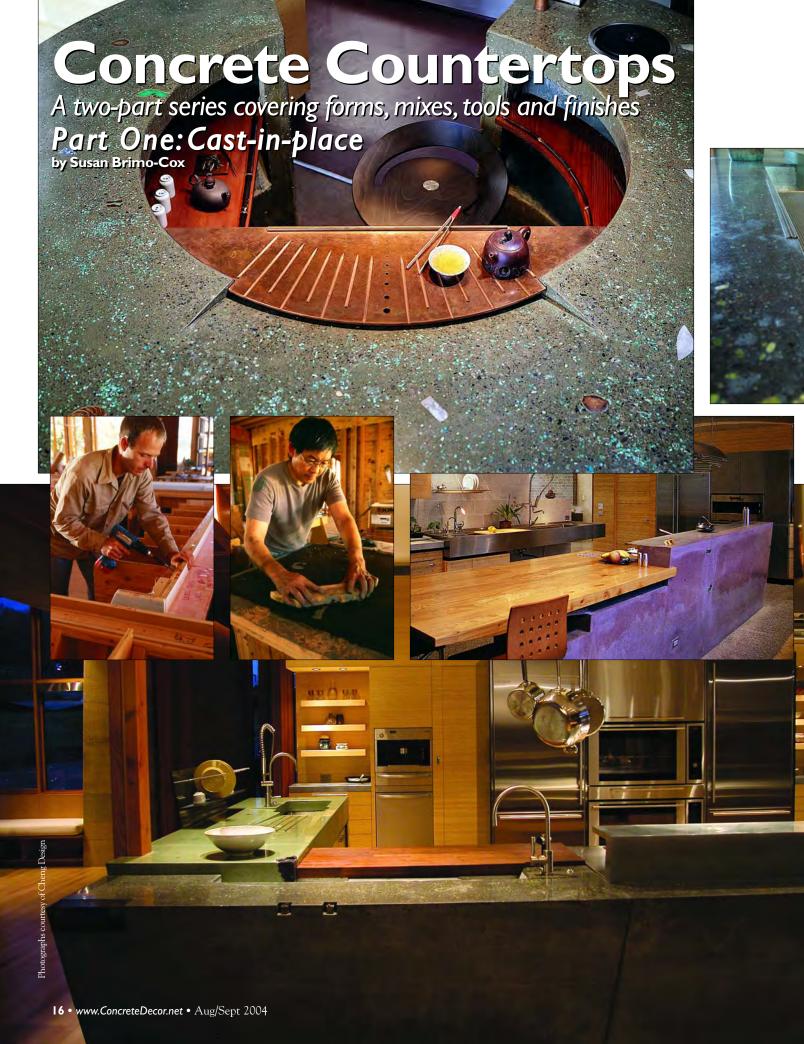
"Even at the end of a long, hard day, when it seems like we're shoving 40 hours of work into an eight-hour day, I find myself turning around and taking a second peek at what we've done. I get satisfaction knowing we created something working together as a team, each doing their part to create a form of art, and that's pretty cool. I love it. A lot of people can't say that about their work."

Media attention benefits entire trade

Last spring, Carlton Concrete's work was featured in an episode of Extreme Makeover: Home Edition that involved refurbishing a home for eight kids whose parents had both recently died. The hardest part of the project, Carlton says, was doing a two-to three-day job in five to six hours — with the TV cameras rolling all the while.

Their work was such a hit that the show's producers invited them back to participate in four more shows this season.

The exposure is not just good for his company, Carlton points out. It's good for the whole industry. "People can turn on their TVs on Sundays and see stamped concrete and how it fits into a beautiful home setting. And a certain number of them will choose decorative concrete for their own project. I mean, there's a guy in Minnesota who will benefit from me stamping a project in Northern California. It's opening the market for everybody in the business."



s demand for concrete countertops has swelled across the country, concrete contractors and artists have been honing their techniques to craft functional art at its finest. Producing concrete countertops falls into two general categories: cast-in-place and precast. There are ardent

> proponents of both methods, and many concrete countertop contractor-artists use both methods, depending on a specific project's application.

Here we'll explore the cast-in-place method. Part Two, in the next issue of Concrete Decor, will focus on the precast method.

Cast-in-place advantages

"Less complicated" and "seamless" are the most frequent comments used to describe cast-in-place concrete countertops. What's more, they are typically less expensive than the precast method.

As Tom Ralston, president and chief executive officer of Tom Ralston Concrete in Santa Cruz, Calif., observes, "You don't have to be a master form-setter. [This method is] more forgiving than molds. Also, it

has more of a handcrafted look and feel."

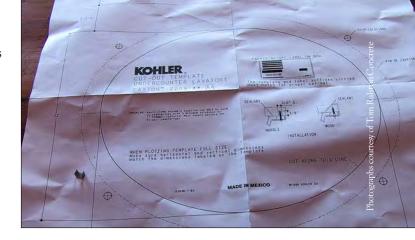
Richard Smith, owner of Richard Smith Custom Concrete in West Hills, Calif., expresses similar sentiments. "With cast-in-place you'll see tool and trowel marks and finishing marks. Some people find this desirable. ... It's like building a violin. You watch the creation — a working piece of artwork in the house."

Other advantages include greater flexibility in making monolithic units, fewer — if any — seams and no worries about moving heavy, fragile concrete countertops to a job site.

What you do need for cast-in-place countertops, however, is time: time to set the forms, time to pour the concrete, time to strip away the forms and time for the concrete to cure. If you don't have that kind of time on site, precasting may be the required method.

Besides site time requirements, there are some other drawbacks to the cast-in-place method. Primarily, you can't pour as precisely as with the precast method. You won't get the same crisp lines and you are more limited in the finishes you can achieve. Also, as Rhodes points out, if something goes wrong "the client is looking over your shoulder."

With that in mind, cast-in-place has obvious advantages for a contractor already working on site, says Buddy Rhodes, president of Buddy Rhodes Studio Inc. in San Francisco. "It is a great way for a contractor that is already working in the house to make [countertops]. The forms are built around the cabinets and such. What you see is what you get. The project is dependent on the preparation in making the edge forms and sink knock-outs. If you are already working in the house you can monitor it on a daily basis and make sure it cures slowly and evenly."









Building forms and reinforcement

Keep the words "level" and "flat" in mind and you will be off on the right foot for cast-in-place countertops. What you use to create your forms is not as critical.

"We use anything, from melamine to 2 x 4s to 1 x 4s to plywood. We're not that fussy. ... But you have to have solid



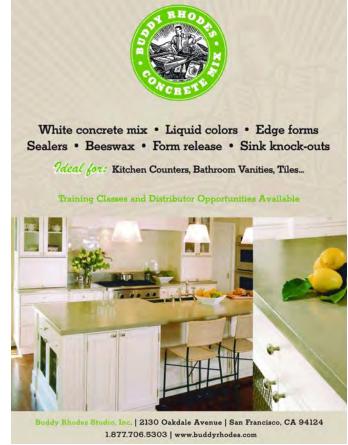
support. The weight of a concrete countertop two inches thick is about 25 pounds per square foot; 1½ inches thick is about 18 pounds," reports Ralston.

For the typical concrete contractor, preparation for the cast-in-place method will sound very familiar. "The cast-inplace method is set up with plywood and 2 x 4s like a 'curb and gutter' that is a

staple for the concrete contractor. They strip the outer edge of the edge form after the cement sets up a little and finish the edge along with the top for a seamless edge," explains Rhodes.

For Smith, there are no limits to what you can form. "You don't have to be just square." But, he adds, "The number one thing is accuracy." Smith





CIRCLE #07 ON READER SERVICE CARD

also uses some of the tricks and materials used in pouring steps and swimming pool coping — particularly the use of plastic foam for forming edges. Not restricted to bull-nose or straight cantilever, there's no limit to the type of edging he can get, he says. Smith says he uses low-stick tape with double-stick tape on top to attach the foam to the form.

Most cast-in-place contractors use reinforcement.

Smith uses expanded metal lath attached to the substrate with screws left raised about ½-inch. He also uses pencil rod and No. 3 rebar along edges.

Rhodes says what he uses depends on how thick the slab will be. He uses rebar for slabs more than 2½ inches thick, and galvanized wire mesh in his 1½-inch slabs. "Welded-wire mesh also works, even chicken wire for some projects. We also use thin threaded rod to reinforce around sink openings."

Ralston also makes his reinforcement choices based on the project. But he has words of caution as well. For thinner countertops he doesn't use rebar because it "can shadow on the surface." And it is important to anchor wire mesh securely. "There is nothing worse than pouring a countertop and have the wire mesh poke through the face."

Depending on the application, fiber reinforcement is frequently used in the concrete mix when cast in place. Smith uses it if there is a particularly long stretch of countertop, but lessens the amount he uses if the countertop requires more detail.

The mix design

Some of the pioneers in the concrete countertop arena have developed mix designs that are available for contractors to purchase and use. When he's not using his own mix, Ralston uses one developed by Buddy Rhodes. "We bag our own mix using white portland cement, sand, marble dust, metakaolin and other ingredients. We use liquid colors in the mix water to color the slabs all the way through," Rhodes says.

Fu-Tung Cheng, principal and chief executive officer of Cheng Design in Berkeley, Calif., has also designed a prepared mix that contractors can use to eliminate the guesswork. "You just add water and Quickcrete. It has the additives, plasticizers and [additional ingredients] included," he says.

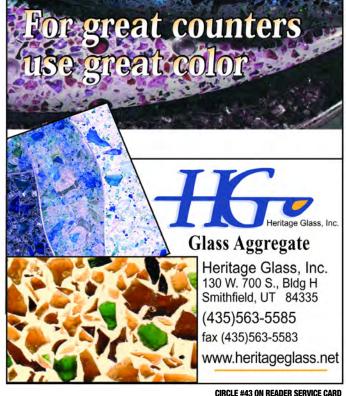
Ralston also points out that "you can order a nice structural mix from the ready-mix company — with ½-inch angular rock, not pea gravel."

Smith prefers a standard gray, generic mix design for his concrete, but "we'll cut the portland cement and add highearly cement" for faster drying and less shrinkage. He's not as concerned with slump either, but rather with the sandcement ratio. "I'm only really concerned with shrinkage," he says.

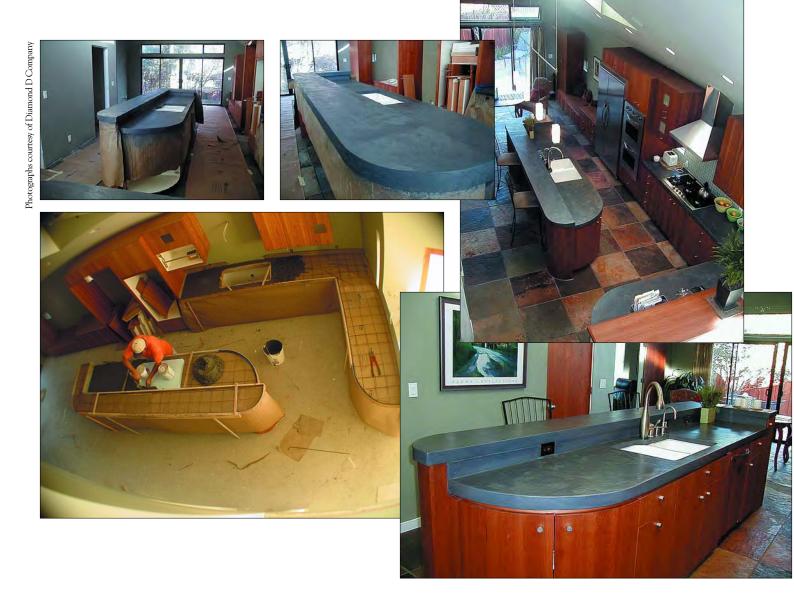
Ralston, on the other hand, likes a stiff 3-inch slump, which he usually then vibrates. "It'll turn into about a 4-inch slump as the water and cream rises."

Cheng says, "We're looking for a 6inch slump" that you can adjust with water. When pouring countertops in





CIRCLE #43 ON READER SERVICE CARD



place, "at the most you're doing 9 cubic feet. You have more control than pouring a patio."

Of course, from one region of the country to another, a mix design can change depending on the materials available and the climate conditions.

Many contractors who cast in place use integral color. Liquid pigment seems to be the preference. Ralston advises, "Order at least one yard to get a consistent batch."

Tools, vibrating and cure time

Tools used for cast-in-place countertops are pretty much the standard tools for any poured-in-place concrete work: standard mortar mixers, wood floats, standard trowels, etc. But you'll find a variety of custom-made tools as well. Smith has some in stainless and some made of

fiberglass. Ralston reports, "I have tools for all occasions," including Sheetrock tools he's cut up, palm sanders, hacksaws, whatever looks like it would work.

When it comes to vibrating the concrete, Ralston recommends a hand-held vibrator, not only because they are light, but also because they are user-friendly. He recalls one project where "they brought in a big vibrator that nearly vibrated the forms loose. It was crazy!"

Smith, because he uses plastic foam in his forms, doesn't want to create excess cream, so he doesn't usually use a vibrator when he casts in place. "We pour a thin coat first. Then we pour on top of that — in lifts — seconds behind each other so we eliminate bubbles." But if the countertop has cornices or continues down to the floor he will use a vibrator.

Like with all concrete applications, cure time is very important. Rhodes explains, "Cast-in-place should be tented to allow for a slow and even curing. Keep the slab moist and do not let it dry out too fast. If the plastic lays on the surface it might leave a shadow."

Controlling the curing process is one way cast-in-place contractors eliminate the cracks that otherwise might require control joints. If control joints are used in a cast-in-place application, you will likely find them in weak areas, such as corners of notches.

Shaping and finishing techniques

The cast-in-place method offers various creative opportunities, perhaps just not as refined in nature as with the precast method.

Want to shape the surface? It can be done, but Cheng says it's not easy. "You can put some curbs and restrict the concrete for some shaping, like a driveway." And you can inlay items. "But you can never get as flat as in a mold," he adds.

Rhodes observes, "You have to be creative. Drain boards can be screeded into the counter. ..."

Ralston uses foam pieces to block out where a sink will go and embeds metal trivets through the thickness of a cast-in-place countertop. He also notes that cast-in-place concrete countertops can be stamped. On occasion he has used texture mats to imprint a texture.

Finishing techniques vary from contractor to contractor and depend on the desired results. Some customers will want the surface to look handcrafted; others want a more polished look.

What you can achieve spans from "polished to expose the aggregate, a light sanding to leave the cream or trowel marks for a hard trowel," Rhodes explains.

"A lot of times we'll spray water and trowel for a burnished look," Ralston says.

Smith points out, "It's all in the honing. We lightly sand or diamond hone [the surface] after a few days. The harder [the surface] gets, the easier it is to hone."

To retain the natural look of the concrete, a matte finish generally works well. A highly polished finish on a cast-in-place countertop is difficult and quite messy to achieve on site.

As Cheng points out, the major difficulty in grinding and polishing a cast-in-place surface has to do with how level the surface is. Even slight dips can be very problematic.

Final thoughts

With cast-in-place countertops you need to expect to be on site for at least several days. Reminiscing about a 165-square-foot countertop job he completed in Atlanta, Ralston explains they started at 6 A.M. and finished setting the forms the first day at 10:30 P.M. The next day the crew was on site from 8:30 A.M. to 8:30

P.M. pouring the concrete. Four hours the following day were spent stripping forms.

If your preparation work is done well — particularly the support and leveling —casting in place can be less complicated and more straightforward a process, especially for contractors good with form work. If you only have one day for installation, need to control the environment or

incorporate intricate detailing or embedded objects into the countertop, the precast technique may be the way for you to go.

Cast-in-place concrete countertops may not be for everyone, but as Smith observes, "There is something to be said about seeing the craftsmanship" in a cast-in-place countertop.





ometimes there's no better way to finish a cementitious topping than to get down on your hands and kneeboards and go to town with a trowel.

Sure, self-levelers can cover large areas with a minimum of mess and manpower, they can render glass-smooth finishes with relative ease, and they can

handle the traffic of even the most monstrous forklifts. But for creating decorative floors with a handcrafted feel, the trowel is hard to beat.

Not only do the imperfections of a hand-troweled floor have artistic merit in their own right (a concrete artisan's trowel marks are as unique as an artist's brush strokes), but they will cause stains and tinted sealers to react with the coating unevenly, resulting in marbled or mottled looks.

"You can kind of screw up a finishing job that you're going to stain and seal, and people will adore you to death," says Julio Hallack, president and owner of Concrete Innovations in Turlock, Calif. "Many interior designers are very fond of these kinds of finishes and they want you to have innovations in your thinking."

Indeed, in the right hands, a trowel can produce a farranging variety of finishes.

"The possibilities are virtually endless," says Chris

Sullivan, national technical director for QC Construction Products, a California-based cement products manufacturer. "You can do everything from creating a solid, monotone surface that looks just like gray concrete, all the way up to creating the effect of marble or stone or seamless linoleum

tile where you've got multiple colors blended together in a random pattern."

For marbled or cloud-like color effects, color hardeners can be broadcast onto a topping and troweled in. Similarly, pigmented water can be sprayed or dashed upon the surface, then hit with a trowel. Another approach is to mix two or three batches of an overlay or microtopping with different integral colors or different loadings of the same color. That's a technique used by Colormaker Floors, a skimcoat manufacturer in Vancouver, Canada.

A marbled Colormaker floor might start off with a smooth-troweled base coat loaded with one cup of an integral color. A second batch, loaded with 1½ or two cups of the same color, would then be broadcast randomly on the base layer and troweled in. "It mingles and gels and creates those highs and lows of the color that give the marbleized effect," says Victor Pachade, Colormaker's sales manager. "That's what is possible with the second pass of the trowel."

The textures you can get through troweling range from smooth, dense hard-troweled surfaces, to the lopped-off peaks and rough lows of knockdown finishes, to the oddball variations such as scallop finishes. Each cementitious overlay or microtopping on the market is designed to render certain finishes and not others, and ignoring the manufacturer's recommendations is simply asking for trouble. So is ignoring recommendations for primers.

"There are a lot of contractors out there who believe primers aren't necessary," says contractor Wes Vollmer, head of Alternative Finishes in Texas. "The manufacturers have done tests with and without primers, and the ones with primers stay down far longer than the ones without primer."

A wide variety of finishes

For a rough-textured effect that can cover a multitude of substrate sins, slop









troweling is often chosen. To slop trowel, a coating is worked with the full surface — rather than just the edge — of a steel trowel, which is lifted after each pass.

"If the substrate is too wavy, or there are too many patches, or the customer doesn't want to pay to smooth the floor, slop troweling would be a good way to go," says Brandon Carpenter, of the California-based concrete products manufacturer Floric Polytech. "It doesn't necessarily give you the best aesthetic, but it's easy, it's cheap and you still end up with a rejuvenated canvas that you can go in and saw cut and acid stain."

Slop troweling lends itself to creative effects such as faux stone. Individual rocks can be slop troweled in place with joints left in between that can later be mortared. Grout lines between stones can also be made with stencils, strapping tape or by hand carving.

Faux wooden planking is another possibility with slop troweling; simulated wood grain can be achieved by dragging the trowel in a line while lifting slightly to create suction.

Knockdown finishes are a popular effect with good anti-slip qualities well suited to outdoor surfaces. Knockdowns are achieved by spraying down a lumpy coating material with a hopper gun, then using a steel trowel to decapitate and smooth the high points of the lumps.

Skip troweling produces an exaggerated version of the knockdown texture. After a smooth base coat is troweled in place, the trowel is loaded with a small amount of additional topping material and "skipped" across the first layer, leaving raised patties of material with flat, smooth surfaces. Extra silica is sometimes added to the coating to encourage the base coat to



grab the additional material from the trowel. Skip troweling, as well as knockdown finishes, work nicely with stencils.

For a hard-troweled finish, a topping is spread using a steel-bladed trowel held at a slight angle. Microtoppings tend to lend themselves best to hard troweling, as many thicker overlays are subject to density blisters resulting from different curing times between the cement and the polymers in the coating.

"A quarter inch of material that is highly polymer-modified, like a stamped overlay, is where you start to have issues with density blisters," says Carpenter. "Microtoppings are too thin for that to happen."

Burnishing is a popular option on a hard-troweled surface. For a burnished look, the coating is repeatedly and vigorously troweled until fine particles of steel are actually imparted into the floor, creating a sort of burned sheen.

"When you're burnishing, you're troweling so much and so hard that the trowel actually starts to sing," says contractor Tom Ralston, of Tom Ralston Concrete in California. "It goes 'wing, wing."

Power trowels make burnishing easy
— so easy, in fact, that the tricky part

becomes avoiding burnish marks on floors where the look isn't wanted. Some manufacturers, such as Wagman Metal Products in Pennsylvania, have developed plastic blades for power trowels to eliminate unwanted burnishing.

Most conventional power trowels weigh too much to use on overlays, and this has created a niche for the handful of lightweight power trowel manufacturers, such as HoverTrowel. Its 40-pound trowel was originally designed for finishing polymer floor coverings, but it has proven to work equally well on overlays and microtoppings.

While the heftier machines tend to compact concrete to a point where it won't accept stains, the lightweight power trowels don't. "You can burnish an overlay or microtopping and still go back and stain it," says Drew Fagley, president of HoverTrowel.

Many microtoppings can't withstand more than a couple passes of even a hand trowel. In these cases, a feather coating — a microtopping that contains micro-aggregates —can be applied on top of the microtopping for a burnished look.

To achieve a sweated finish, also known as a swirled finish, the trowel is held flat on the surface and worked in a rotary motion, which draws up the fine particles and liquid to the surface. Unlike slop troweling, the trowel is kept in constant contact with the surface during troweling. A magnesium trowel, which is flatter and more rigid than a steel trowel, is ideal for sweat troweling.

The worm finish is similar to the sweat finish, except a neoprene trowel is employed and larger silica might be used in the topping. The neoprene grabs and "rolls" the silica particles, creating tiny "wormholes" in the surface.

Another fanciful effect you can achieve with a trowel is the scallop finish, where a v-notch trowel is used to create a pattern of small, repeating fan shapes. This highly-textured finish is usually found on walls, but if flooded with a clear epoxy it can make for a perfectly smooth, unusual floor.

Other whimsical effects can be had by troweling metal, glass and other objects into a surface, to either embed or imprint them.

Dana Boyer, an Arizona artist turned concrete contractor, likes imprinting fish into her hand-troweled floors. She lays them on the topping after the first troweling, presses them into the surface on the second troweling, then removes them after the concrete has cured.

"It's tedious picking fish out of there, but that's part of the job," Boyer says.

Boyer views her trowels as artistic tools not unlike a painter's palette knife. "I'm a contractor and I use the tools of the trade as they're meant to be used," she says. "But I'm also an artist, and therefore nothing applies to me. If I want to use a heavy trowel made to finish off concrete in a manner that it wasn't designed for, I really don't care. Everything that's available is my tool. I find what works and do the job."



CIRCLE #33 ON READER SERVICE CARD



CIRCLE #107 ON READER SERVICE CARD

Celebrating Concrete! Liquid Stone exhibit, carnival and canoes

Liquid Stone exhibit, carnival and canoes leave lasting impression

by Stacey Enesey Klemenc

oncrete is both extraordinary and commonplace. Its chameleon-like attributes allow it to become so many things, from ordinary sidewalks and towering skyscrapers to patios that resemble slate and countertops that rival the finest stone. Both decorative and practical, concrete comes in any color imaginable, with a texture smooth, rough or in-between.

Contractors have appreciated these qualities for many years. And, thanks to a recent concrete extravaganza that featured a Concrete Carnival family festival, an exhibition and a concrete canoe competition, many not associated with the trade have learned to appreciate its surprising and fascinating properties, too.

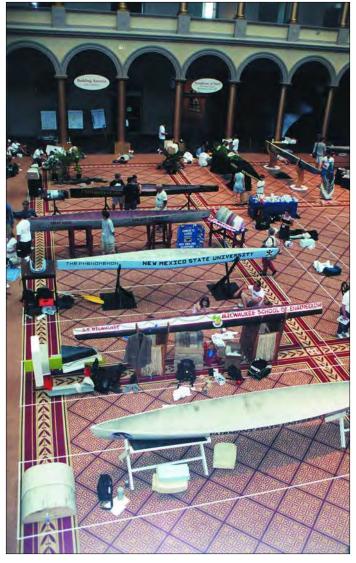
The events, held in June, were primarily sponsored by the National Building Museum in Washington, D.C., and the American Society of Civil Engineers,

Lafarge, and Degussa Admixtures Inc./Master Builders.

"Many people never give concrete a second thought — and fewer still understand how versatile and interesting it can be," says Degussa Admixtures President and CEO Mike Shydlowski, whose company has sponsored the National Concrete Canoe Competition since 1988. This series of events in the nation's capital was designed to change that line of thinking.

Fun for the whole family

To kick off the opening of the exhibition *Liquid Stone: New Architecture in Concrete*, the museum hosted a free Concrete



Carnival, held June 19, that featured a variety of hands-on activities and demonstrations throughout the day. Participants had the opportunity to make and decorate a variety of concrete objects, mix themselves an "edible" concrete snack, see how concrete canoes float and explore many other remarkable aspects of concrete.

Lafarge's mascot, Rocky, and a ready-mix truck greeted youngsters and parents as they arrived.

A Concrete Petting Zoo, sponsored in part by Concrete Decor, let visitors get up close and personal with a healthy sampling of various concrete species, including colorful specimens, plain-Jane varieties and even concrete blocks that float.

There was a concrete finishing booth for those who wanted to give the trowel a try. And for budding scientists and future contractors alike, several activity stations were

designed to let people see firsthand that when certain substances are mixed together they cause a chemical reaction and create a new material.

"These simple experiments are designed to make people consider how extraordinary the ordinary can be," says ASCE president Patricia D. Galloway, P.E. "When visitors walk outside after the festival, they'll have a new appreciation for the substance below their feet."

Concrete canoes in the capital

Festival-goers also had a chance to marvel at the ingenuity of scores of students from across North America who took



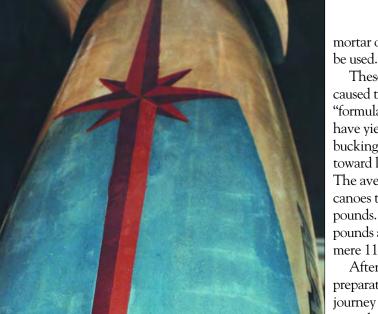
part in the 17th annual ASCE/Master Builders National Concrete Canoe Competition. This year marked the first time in nearly a decade that the competition was held in the Washington, D.C., area.

The competition is designed to challenge students from top civil engineering schools to make the improbable a reality: design, build and race canoes made of concrete. The overall scoring is equally based on four components: a written report, an oral presentation, the canoe itself and five different racing events, which were held at Lake Fairfax in Virginia.

Creating a canoe that can actually float is only half the battle. To be competitive, students also have to design a

canoe with the right balance of characteristics for optimum

speed, maneuverability, strength and stability. In the process, they must follow certain rules, which change from year to year. This year, students were required to use a certain amount of ordinary sand as part of the aggregate mixture and either recycled coal fly ash or ground granulated blast furnace slag as the binding material. (Additional binding materials such as resins or polymers were also permitted.) No premixed or prepackaged concrete, the race, canoes must pass a ramp test," a situation where they must prove they can float horizontally when submerged in water.



mortar or grout mixtures can

These new rules have caused teams to modify their "formulas for success" and have yielded heavier canoes, bucking the 15-year trend toward lighter, sleeker canoes. The average weight for canoes this year was 190 pounds. In 2003, it was 167 pounds and in 2001 it was a mere 117.

After nearly a year of preparation and an 800-mile journey to the nation's capital, students from University of Wisconsin-Madison captured their second national title with their solid black, 180-pound, 21-foot 8-inch 'Rock Solid' canoe. It surpassed entries from 21 other schools not only in speed, but more importantly, in design,

construction and overall performance.

Canada's Université Laval paddled its way to second place with the Iceberg, a 117-pound grey-and-white racing machine. The University of Alabama in Huntsville came in third with the 148-pound white, blue, red and orange ConQuest.

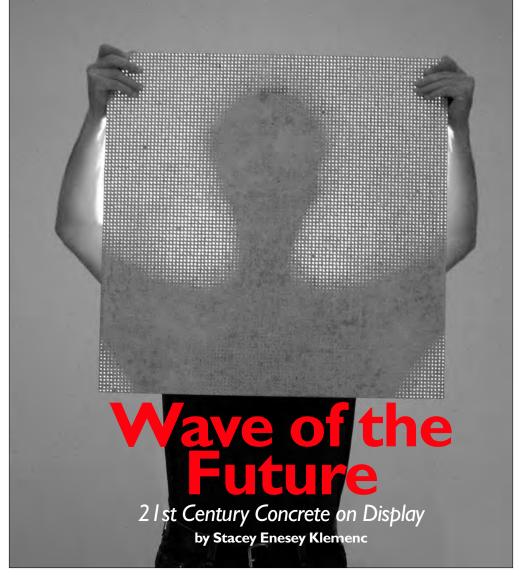
"We have seen amazing technical advancements in the concrete canoe designs and construction over the past 17 years," says Shydlowski. "Every year we challenge students to

> develop new ways to utilize concrete, and every year they produce boats that rival Olympic racing canoes in speed and maneuverability."

The celebration continues

Although the festival and the canoe competition have come and gone, Liquid Stone: New Architecture in Concrete, the exhibit which features nearly 30 very recent or current projects that use concrete in exciting ways, remains on view through Jan. 23, 2005.

Additional sponsors for June's events included Clark Construction LLC, Colormaker Floors Ltd., Concrete Decor magazine, National Ready Mixed Concrete Association, Quikrete, L.M. Scofield Co., Baker Concrete Construction, CEMEX USA and U.S. Silica Co.



he model posed next to a solid stack of seemingly ordinary concrete blocks. In a typical "now you see her, now you don't" fashion, she stepped behind the wall. To the audience's amazement, she didn't disappear from sight. Was this a case where the sand (cement, water and aggregate) was quicker than the eye?

Hardly. It was but one example of the remarkable types of concrete on display at an exhibit organized by the National Building Museum in downtown Washington, D.C. Called Liquid Stone: New Architecture in Concrete, the exhibit features innovations that range from translucent blocks and photoengraved building fronts to revolutionary materials that promise to change the rules of construction as we know them today.

Oh, I see

We all know that concrete can be concocted to look like many things, but who would have thought that the rocksolid substance could be a substitute for a window? As it turns out, a handful of academic and commercial researchers are not just dreaming of this, they're busy making it happen.

The product that seems to have captured the most attention is LiTraCon, an acronym for "light transmitting concrete." Invented in 2001 by Hungarian architect Áron Losonczi, the translucent concrete block is being manufactured by the German company LiTraCon and should be on the market by the end of this year.

"Besides the aesthetic appeal, there are practical uses," says G. Martin Moeller Jr., senior vice president of special projects for the National Building Museum. LiTraCon has structural capabilities and

could be used in an area of a building where you want natural light to come through, such as a fire escape stairwell. In an emergency situation where power is lost, the blocks would allow light to pass through and you could find your way down the staircase.

LiTraCon consists of randomly embedded glass fibers in a proprietary concrete mixture. Because of the inherent characteristic of fiber optics, light doesn't diminish over the thickness of the material. "You could have a wall that's 20-foot thick and light would still pass through," Moeller says.

Another product on display features plastic fibers arranged in a perfect grid. Pixel Panels, developed by Bill Price of the University of Houston, also transmit light from one face of a wall to another, but in more of a pattern. Light that shines through the panels resembles thousands of tiny stars in a night sky. The self-supporting panels, which were largely designed for nonstructural walls, are currently available through special arrangements.

Will Wittig of the University of Detroit-Mercy also developed a process to produce translucent panels. Made of Portland cement and sand, and reinforced with a small amount of chopped fiberglass, his panels are 1/10-inch



thick at their centers — thin enough to be translucent under direct light.

"It's a true concrete," Moeller says, "made without using additives or resin. Will developed a formula for concrete that would still maintain its strength but could be made very thin. You can see light through these panels in much the same way you can see light through thinly sliced stone." The experimental material, which is designed to be used as a decorative element, is not yet available commercially.

Etched in stone

Besides concrete you can see through, there's concrete that can capture that Kodak moment and immortalize it. "Photoengraved concrete is made by a process similar to silk screening," Moeller explains, adding that the technique was developed in France.

A placard at the exhibit explains it best: "A photograph is screen-printed as a layer of tiny dots onto a polystyrene sheet, but instead of paint or ink, the image is printed with a cure retarder —

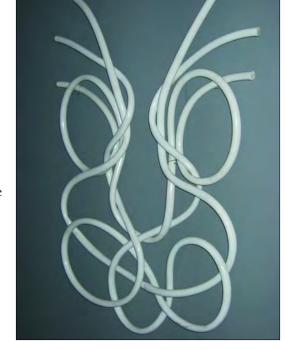
a chemical that slows the cure rate of concrete. The photosensitive sheet is then placed into a concrete mold and the concrete is poured on top of it. After the concrete sets, it is removed from the mold and pressure-washed, revealing a half-tone-like image."

"This system of photo engraving, called serilith, has been around for some 10 years or so," Moeller says, "but it hasn't really caught on."

Incredibly strong, incredibly thin, self-reinforced

That's not the case with Ductal, a product that its maker, Lafarge, predicts will catch on like wildfire. Described as an ultra-high-performance concrete, it contains extremely strong fibers that, in effect, make the material self-reinforcing.

"Because of the strength of the fibers in the concrete mix, it hardens to form a strong and durable material while at the same time maintaining its ductility (flexibility). It has a little bit more of a give and is less brittle than typical concrete," says Moeller.



"Its surface is very dense, which makes it more resistant to weathering and staining. And it's so incredibly strong that it can be used in long-span structures without requiring steel reinforcement."

Furthermore, the revolutionary new material also can be used to create very thin structural members. For instance,







the concrete in the arches at the Shawnessy Light Rail Transit station in Calgary, Canada, each of which spans about 20 feet, is only ¾-inch thick.

What'll they think of next?

Ductal isn't the only thing going on at Lafarge. Agilia, also shown at the exhibit, is touted to be a self-consolidating concrete comprised of a special formula that includes a "superplasticizer." This additive keeps the mix exceptionally fluid during the pouring process without compromising the material's strength. It requires no vibration and can be used for difficult or constrained pours. Its makeup also

allows for unusually fine surface texture.

To help keep surfaces pristine, there is an interesting product recently used by Richard Meier, an architect famous for his gleamingly

white buildings. Commissioned by the Vatican to celebrate the 2,000th anniversary of Christianity, he recently completed the Jubilee Church in Rome. To ensure that the church would not become discolored, he worked with a company in Italy called Italcementi, which developed a brilliantly white cement incorporating photocatalytic particles.

"This product is designed to neutralize the acid in the air, to eat the pollution and still remain white," Moeller says. "The material has been around awhile but the company reworked it. It'll be interesting to see how well it holds up." Another environmentally friendly product on display is Syndecrete, a precast, lightweight concrete free of resins and other toxic substances. Developed by architect David Hertz and available in a wide range of colors and specific mixes, it contains natural minerals and a wide variety of recycled materials, ranging from metal shavings to scrap wood chips.

And for the fashion-minded, there's not only concrete that uses fabric as the formwork, but concrete that uses fabric as its reinforcement. One Washington architect and artist believes that in contrast to steel bars, fabric can be readily shaped to create more uninhibited architectural forms.

So far, Moeller says, the Liquid Stone exhibition has enjoyed a good turnout and the comments have been extremely positive. "Most people are saying that they didn't know concrete could be so beautiful, that they didn't know it could be this interesting."



Tight Spot? Portable Mixers: to the Rescue

by Jeff Woodard

eliable. Multifaceted.
Maintainable. Portable
concrete mixers are all that
and more, says Warren Faler, mixer
product manager for Multiquip in
Carson, Calif. "They can be productive
in a wide variety of applications."

Generally available in sizes ranging from 3 to 12 cubic feet, the smaller models will fit in the trunk of most cars while the larger capacity units can be towed easily. The versatility of a mixer makes it a cost-effective purchase, notes Faler. "Particularly with proper maintenance, these units will last for many years."

Independence and flexibility are clear advantages for contractors owning their own mixer, says Steve Louk, president of Cleform Tool and Gilson Mixers in St. Joseph, Mo. "Many ready-mix companies have a 3-yard minimum before they will deliver," he says. "You also have to be able to pour during their working hours. With a portable mixer, you can mix as little or as much as you want, when you want. You control when and where you pour without depending on an outside vendor."

Faler says the biggest advantage in owning a portable mixer is realized when working on sidewalks,







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What Contractors Are Saying!

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"I knew I still had things to learn, but your class demonstrated techniques I've never encountered before! Great class, well organized and very well presented!"

-Erik Kinkade, www.RockAndWater.com, Author of "Artificial Rock Waterfalls: Rock Making Techniques For The Professional And Hobbyist"

"Fantastic! This has been one of the best-spent days in the last 10 years! An excellent class; I feel lucky to have been part of (it)."

-Dave Moore, Westlake Builders

Fax: ()
1



foundations and binding block, and when preparing mortar bases. Many decorative concrete contractors use portable mixers, too. He cited the monument works industry as an example in which many companies have mixers mounted on their own truck. "When they go to set a headstone," says Louk, "they have everything they need with them. The same holds true for many of the landscape and fence builders."

Louk says one of Gilson's most popular models is a wheelbarrow-style mixer that will fit through a 30-inchwide opening. "This allows the user to mix and pour right where the product is needed. With the interchangeable patented poly drums, there is no cross contamination of colors when using the Gilson Mixer," Louk says.

When to call on ready-mix delivery

Faler says many factors — including job scope, location, staff size and deadline — should be weighed when choosing between a portable mixer and ready-mix delivery. "For instance, it is counterproductive for two contractors to use a portable concrete mixer when they need to pour a slab of 50 square feet. They are much better served using ready-mix. Similarly, if a job needs to be completed in an hour so contractors can move on to the next job, ready-mix is a smarter choice."

On the other hand, says Faler, contractors working in a back yard or space-restricted area where accessi-



bility is a problem will find a portable mixer much more effective. Faler strongly recommends smaller mixers for mixing concrete to anchor fence posts; for patching; for small concrete

slabs on grade; and for mixing nonstick grout. Larger-capacity models are better suited to high-production jobs such as concrete slabs, sidewalks and block walls. Adds Louk, "There are many styles and sizes to choose from, from a 2-cubic-foot pedestal style to a 3½-cubic-foot wheelbarrow style to a 9cubic-foot towable unit. The utility mixers start at 1½ cubic feet and can be mounted to be made stationary; or an optional low- or high-speed tow kit can be added."

Mixers are manufactured with either electric- or gasoline-powered sources, says Faler. "Single-phase electric motors are available in the ½-to 1½-horsepower range while gas engines span from 3 to 13 horsepower. Mixers have speed controls that can be adjusted to fit the requirements of the specific job."

Barrel design can vary — a little

The design of mixing barrels can vary, notes Louk. "Each Gilson mixer features the Quad-Mixing System, a design exclusive to Gilson mixers. This system utilizes a four-piece, replaceable paddle-and-blade combination that creates four independent mixing patterns." This design enhances overall batch quality and mixing efficiency.

Most manufacturers offer steel and polyethylene drums to fit individual user preferences. "Steel drums are more durable, but cleaning can often be tedious," says Faler, "and denting and other damage to the drum is a possibility. Poly drums, which resist rust, can be cleaned in minutes by simply tapping with a rubber mallet."

Per manufacturer recommendations, contractors should check the oil levels and filters of portable mixers daily, "Also, ensure that the mixer V-belts and pulleys are tight while necessary parts are greased regularly," Faler says. Gears on a concrete mixer, however, should never be greased. Debris, sand, sediment or other material can become trapped in the

gears, causing major damage to the unit, Faler says.

Gilson's patented poly-drum mixers make it easy to maintain a clean mixing drum while reducing the need for drum replacement and repair, according to Louk. "Simple cleaning and lubrication will keep your mixer running trouble-free for years to come."



Manufacturer Profile: Rafco Products,

Raico Products, Rancho Cucamonga, California

by Bruce Hackett



Robert Freis





n 1971, Robert Freis was working as a buyer for a California building supply company when a customer asked to buy a set of aluminum stamps for a concrete design application. "The only ones on the market at that time," Freis recalls, "were made by companies that required the buyer to enter into franchise and licensing agreements and undergo training. I saw no reason why an individual shouldn't be able to buy this kind of product over the counter."

Freis began manufacturing and marketing a line of stamping tools under the brand name Brickform. "I was criticized by some people who felt it was wrong to sell this kind of product to those who were not formally trained," he says. "There were people who failed, but there were many more who mastered the use of these stamping tools and did very well. I likened it to selling hammers to people who aren't professional carpenters."

For the first 20 years of the company's existence, Rafco-Brickform concentrated on stamping tools and mats, color hardeners and





36 • www.ConcreteDecor.net • Aug/Sept 2004





Another crucial element of Rafco-Brickform's success story is its firm commitment to training and education. Roman heads up that effort, teaching many of the classes himself at the company's distributor locations across the country and overseas. "We feel as a company that it is our responsibility to properly train contractors in the use of our products," says Roman. "As a rule, we try to encourage contractors to try new products and new applications. By offering our 'deminars' and hands-on training programs, we get them past the point of uneasiness."

Training classes are also a great way to get ideas and feedback from Rafco customers, says Tom Jeffery, director of marketing. "We learn from our customers," he says. "They teach us new ways and new ideas for using our products in efficient and creative ways." The deminars are attended by concrete contractors, residential developers, general contractors, landscape contractors and architects.

Just as the decorative industry itself has been growing exponentially, Rafco-Brickform has continued to enjoy significant growth each year. "We've grown substantially over the past five years," says Jeffery, adding that the growth has necessitated continued expansion of the company's facilities. "We believe our success is due to our customers' satisfaction with our products' performance and our technical support." Rafco employs more than 100 people at four manufacturing and distribution points nationwide, including Rancho Cucamonga, Calif.; Chicago, Ill.; Milton-Freewater, Ore.; and Houston, Texas. Soon Rafco will be opening a fifth manufacturing and distribution center on the East Coast.

While most of the company's business is in the U.S., significant success has been found in Europe and, more recently, Asia. Roman says that opportunities for decorative concrete are numerous and lucrative in China and Vietnam. "They're building whole new cities and gigantic resorts, and they're using miles and miles of stamped concrete."

The future looks bright, Jeffery says. "Our product line continues to grow to meet industry needs. We have introduced Brickform Color Hardener, Antique Release, Cem-Coat, Blush-Tone Acid Stain, Sealers, Liquid Color, maintenance products and Sandblast Stencils. New products are on the horizon, and, in fact, we introduced a line of microtoppings and stampable overlayments at this year's World of Concrete trade show."

"We're always looking for ways to improve productivity, systems and communication while





continuing to show industry support," Freis says. "In fact, on the back of all our business cards, you'll find our business mission statement: 'Our customers choose Rafco Products because Rafco consistently provides quality products and services at competitive prices. Top quality materials and responsive personal service are the standards by which Rafco operates. All of our employees understand and believe in our mission."





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Get an Edge on Your Competitors Decorative curbing can be a lucrative niche, with the right equipment.

By John Strieder

hen it comes to edging that pleases the eye, decorative concrete curbs have no competition.

Railroad ties rot, bender board breaks and brick mortar crumbles. But decorative curbing is permanent.

"It's something homeowners know they need in most cases for maintenance reasons," says Larry Rose, president and CEO of manufacturer Curbmate Corp. "It costs slightly more than bender board

but not much more, and it's a one-time cost. We're pricecompetitive with anything else."

What's more, the common curb can be gussied up with a multitude of decorative options, from angling and stamping to embedded lights and electric dog fencing. And that's good news for contractors. Decorative flourishes can add dollars per square foot to what a customer will pay for curbing.

The biggest problem with decorative curbing is that, with its form setups and takedowns, the process consumes a lot of time, labor and equipment.

Enter the curbing machine. All the operator needs to do is keep the machine filled with fresh concrete and steer it, and it squeezes out perfectly formed curb ready to stamp and cure.

Curbing machines execute a curbing job twice or even three times as fast as traditional methods. They save in labor and trips — and, last but not least, the cost of forms.

Recipe for success

Any concrete job starts with the mix, and when mixing for curb machines, the experts recommend a sand to cement ratio of 3:1 or 4:1. Patrick Roach, owner of Borderline Stamp Inc., elaborates: One 47-pound bag of Type 1 or 2 portland cement, four five-gallon buckets of washed concrete sand, and two and a half to three gallons of water. At the end of the mix, he adds an Australian product that eliminates efflorescence. His recipe produces 17 to 19 feet of curb per bag of cement.

The goal is a "zero slump" mix that holds its shape. "It extrudes out the back of the machine like licorice," Roach says. "As soon as it comes out of the machine, it actually starts to look dry."

The water needed in the mix varies depending on the moisture in the sand, says Rose. He trains contractors to measure moisture by hand with a "snowball pack." Wad a



handful of sand and toss it gently in the palm, he says. If it stays together, it's got about the right amount of moisture. Too wet, and water will seep out as it's squeezed; too dry and it crumbles.

Some experts recommend spiking the mix with glass-fiber mesh for crack resistance and structural support. A fingertip's worth of half-inch mesh will add all the extra strength a curb batch needs, Roach says. "You don't need a lot of it in there."

But others say glass fiber is not necessary. "I used it for years and I no longer use it," Rose says. If the concrete has the proper amount of moisture, it will hold its own without fiber, he says. "It doesn't hurt it. It's just that in my opinion it doesn't do any good."

Duane Patterson, sales and marketing manager for TEAM Inc., which manufactures Curb King machines, says there is a delicate balance to achieve with glass fibers. A handful of half-inch fibers in a batch will work great, he says. But the concrete will be weaker in places where fiber clumps. "Use too much and you have a hairy curb, and you have to go back with a blowtorch and melt it," he says.

Another popular additive is \% inch pea gravel, which raises the strength of the curb from 2,000 psi to more than 3,000 psi, Roach says.

Finally, control joints are cut in the curb to control cracking. "If you know how to run the machine you shouldn't have cracking," Roach asserts.

Tools and trenches

Where can you lay curbing? Anywhere, say the experts. But preparation is part of the job. "Every step you do makes your curb one step better," Patterson says. "You need to get it to be where there's not much adjustment needed when operating the machine."

Prep work for curbing is simple, according to Jimmie Rojas, research and development manager for The Concrete Edge Co., manufacturers of Lil' Bubba curb machines. Cut a trench that measures 2 inches by 9 inches, with a depth of 1 inch to 2 inches. "It should be wide enough so the curbing machine fits and runs with ease," he says.

The installer packs the dirt and prepares subgrade as needed. "The trench doesn't need to be level to the horizon," says Rose of Curbmate. "The machine will follow it. But you don't want it to go up and down a lot."

There are two kinds of tools used to prepare a trench for a curb machine: a

sod-cutter or square shovel, which cuts the grass mat, and a trencher, which breaks up rocks, mulches root systems and stirs up the dirt.

Roach, of Borderline Stamp, recommends the former. "You simply cut through and level as best you can," he says. "You generally follow the lay of the land."

Bob Leighton, consultant with Kwik Kerb USA Inc., says a trencher may not leave the dirt compact enough for successful curbing. Rocks can be kicked out and roots chopped, but settling dirt will weaken the curb, he says.

But Patterson of TEAM Inc. prefers the trencher. "It gives you a nice solid base," he says.

There are also two kinds of curbing machines: a compaction ram machine, which pounds out the concrete, and an auger machine. The augur design is preferred for machines on big commercial jobs, Rose says, but on a residential job, a compaction ram will fill in smaller divots and is easier to keep level.

Patterson, for his part, favors a twin augur system when dealing with divots. "Rams just don't have the climbing ability," he says. "The ram will only put pressure on a forward stroke."

The machine comes with levels. A string line to one side will help the operator steer it in a straight line. "You can follow a string line with the machine but the grade of the landscape really depicts how straight the line will be," Rojas says.

The operator has time to adjust the freshly laid curb after it's placed but before it sets, Leighton notes.

Curbing machines are usually capable of performing radiuses as tight as 14 inches, but the tighter the radius, the weaker the curb. Most advisors recommend a minimum of 30 inches to 35 inches.

Shapes and patterns

Not surprisingly, today's curbing contractor has a wealth of colors, angles, profiles and stamping patterns to choose from.

There's mower strip curb, car park curb and slant edge curb. The most popular, Roach says, is angled curb, which gives passersby a nice view of the curb and is easy on lawnmowers. "The

big movement in landscape curbing is going to stamped curbs and lighted curbs," he says. "You're able to do both with angled curbing."

There are patterns that simulate brick, slate, cobblestone and flagstone. Borderline Stamp offers "Cactus, "Driftwood," "Outback Textured," "Texas Star," "Basket Weave" and "Native Dancer," among others.



"You can pretty much match up to any existing building, driveway, whatever," Leighton says.

The national appetite for landscape curbing began to grow after the 2000 Winter Olympics in Utah, says Patterson of TEAM Inc., but the application had been commonplace in Utah for a decade and a half before that. "Nobody here thinks of doing anything else."

Curbing machines first caught on in the West, Roach says. Now they're big in Texas, and they're starting to get big on the East Coast. "Slowly but surely they're sweeping across the country," he says. "In certain sections of the country people haven't even heard of [landscape] curbing yet. All we do is go in and introduce it and that's all it takes."

With cross-regional appeal comes region-specific problems. In Utah, for example, the ground freezes and thaws regularly, causing cracks. Patterson says the simplest and cheapest solution is to add a teaspoon of dish soap to the mix to promote air entrainment. In California, contractors tend to cut joints four feet apart, but in colder climes, contractors may carve every two and a half feet, he says.

In Florida, contractors worry more about sinkage than expansion, says Bob Leighton of Kwik Kerb. He recommends cutting joints every three or four feet in warm

Photographs courtesy of Borderline St.

climes, giving the curbs some flexibility when the ground shifts below them.





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Indoor-Outdoor Radiant: The Perfect Companion to Decorative Concrete

by John Vastyan

n Pennsylvania, winter arrived early last year to deliver a one-two punch. A blast of frigid cold was followed swiftly by rain that froze fast to trees, driveways, sidewalks and anything else that didn't have the ability, or sense, to get outta the way.

Thick ice accumulated everywhere as armies of municipal workers and homeowners toiled away on the front lines. Their weapons of mass destruction: salt, chemicals, plows and heavy ice blades. Alas, all those beautifully crafted, stamped, stained and sculpted concrete surfaces were chipped, cracked and chemically attacked.

But it doesn't need to be that way. Your craftsmanship can be protected easily, and the home and business owners that you work for have the right to know about it. The answer is a technique that's been hard at work indoors for years: radiant heat. It's also



a great companion to exterior concrete. Why not flick a switch and melt those blues and backaches away?

Snowmelt technology is, essentially, radiant heat applied to outdoor surfaces. There are few differences between the two heating techniques, and both can be used to heat low- or high-mass concrete surfaces to melt ice and snow, keeping surfaces safe and clear of icy accumulations.

For decorative concrete surfaces — especially those that are stamped with a pattern — snowmelt technology works like a champ and preserves surface treatments intact. As you know all too well, snowmelt chemicals, solutions, salts, blades, scrapers and blowers can quickly take the finish off your best work.

"The key function of a snowmelt system is to keep walkways, driveways, and other areas dry and clear," says Kolyn Marshall, system designer, Watts Radiant. "For commercial applications, especially those deemed critical areas, such as hospital and senior housing entry areas, helicopter pads and delivery ramps, radiant heat performs a valuable, perhaps lifesaving function."

Indoors, radiant floor heating works by using water-filled tubes or electric heating elements to warm the mass of a floor. The surface of the floor then gently emits energy that moves gracefully to all the objects in the room, making them — and your customer's feet — cozy warm.

"Without question, warm floors are the most comfortable form of heat," says Jim Lemen, HVAC/R markets manager, Vanguard Piping Systems. "The radiant heat from a floor will warm everything in a building, giving every surface an inviting sensation that can be felt. The floor becomes the warmest surface in a room, not the coldest." Surprisingly, those surfaces most *un*comfortable without radiant heat — concrete, stone and tile — become the *most* comfortable with radiant because they transfer the heat so well.

Whether hydronic or electric, radiant floor heat costs less to operate





than any other form of heat. Because radiant floors offer more comfort at lower thermostat settings, most people find that they're comfortable at lower room temperatures.

Indoor? Outdoor?

The use of decorative concrete is moving fast both indoors and out. Let's take a look at the unique compatibility of radiant heat with those artfully crafted concrete surfaces that you know so well.

The most likely uses of decorative concrete inside a structure are for ongrade, high-mass slabs and finished basements, although today, due in great part to your selling efforts and the unique aesthetics of decorative concrete, there's growing interest in suspended, thin-slab and lightweight concrete applications. Radiant heat has perhaps pushed the use of thin slabs faster than any other force.

All this and snowmelting too?

While considering, or recommending, a radiant heat system, look at the floor plan carefully to see if there might be a door, a sidewalk or a garage entrance that faces north or is exposed to ice

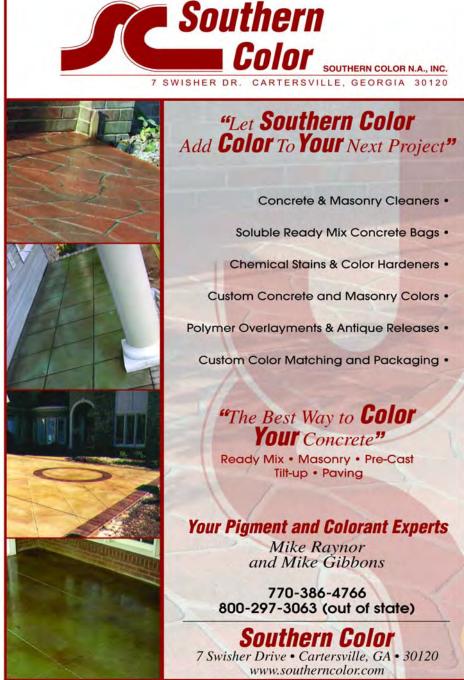
and snow buildup. The home or building owner should be encouraged to ask the radiant designer to add one or more snowmelting zones onto the heating system.

This entails moving a heated water/antifreeze solution from a heat exchanger attached to your space heating boiler or dedicated heat source underground to cold surfaces outside. You can activate snowmelting zones

when the weather report calls for freezing precipitation, or simply wait for the microprocessor control to do the job.

For a snowmelt system, the designer specifies tubing embedded in outdoor or garage slabs. The designer must consider the influence of local weather, insulation, pipe spacing, pipe diameter and circuit length. PEX (cross-linked polyethylene) or EPDM synthetic





rubber radiant tubing should have at least two inches of concrete over the top of the tubing. Usually, building codes provide exact measurements for this.

Snowmelting has several benefits. Icy surfaces are no longer a concern and maintenance-free. Facility maintenance costs are reduced because ice-melting chemicals aren't required. These chemicals kill landscaping, increase building cleanup as they are tracked inside, and can degrade concrete and asphalt. Maintenance costs fall sharply.

And with today's litigious society, snowmelts don't cost money; they save it! The cost of the system is more than returned with one avoided lawsuit.

Hydronic systems

Hydronic (water-based) radiant floor systems are used in larger areas or for an entire home or building. Generally, hot water radiant is best suited for spaces of 500 square feet or more, or where hot water is already used as a heat source. Hydronic tubing can be embedded in

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concrete slabs, in thin-slabs over frame floors, stapled up between floor joists, or installed on top of the subfloor.

"Modern hydronic radiant heating systems use a closed loop design," says Tim Doran, technical design manager, Wirsbo. Water is heated by a heat source — typically a boiler or water heater — and then circulated through





the tubing to all areas of the building, or outside. Warmth is then delivered to each zone as thermostats call for it. "In a closed loop system, the water is permanently contained in the tubing so that it doesn't blend with domestic water. Once it's heated, then circulated throughout the radiant system, the same water returns to the heat source to be reheated and circulated again."

Hydronic radiant floor heating operates on low pressure (usually below 20 psi) with temperatures often in the 90 to 150°F range.

PEX tubing is a great product for radiant heat and snowmelting applications. Some care must be taken to protect it from job-site puncture, crushing or exposure to the sun's light. Another top candidate is Watts Radiant's "Onix," sturdy EPDM tubing that is more resistant to job-site abuse and UV radiation.

The system is the sum of its parts

Special distribution units, called manifolds, channel the heated liquid into multiple radiant floor pipe circuits. Manifolds are usually located close to the heated area, although they can be installed in a mechanical room. Each manifold set includes a supply (hot) and a return (cooler) manifold. Manifolds usually include balancing valves to



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control the flow of heated water to each circuit, or loop. Circuits are the loops of PEX or EPDM tubing that begin at the supply manifold and end at the return

manifold. The combination of manifolds and circuits heat a defined area that's called a zone. A zone can be one room or several.

One of the more interesting products for hydronic radiant is a high-tech, interlocking underlayment, Bekotec, made by Schluter. Studded polystyrene foam panels are placed directly over load-bearing substrate to isolate cracks and sound, and for thermal insulation. Radiant heat tubing is placed between a geometric pattern of "studs" that rise in the lower level.

Electric systems are another option

An electric system may be the best choice for small areas like a master bathroom. Of course, if electric energy is locally affordable, it could be used to heat, or provide floor warming, to an entire home or business. SunTouch is the leading supplier of mat systems for interior uses.

Delta-Therm sells a heavy electric cable product well suited to outdoor duty. For slabs, stairs and ramps, their snow melting cables are made from inorganic materials, so they don't deteriorate with age. The cable assemblies are laid in a serpentine pattern, attached to reinforcing mesh prior to the concrete or asphalt pour. Because the cables are constant-watt, the ability to manipulate heat output



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on a square foot basis happens through cable spacing, usually at distances of 6 to 9 inches.

Where to get started?

It's always best to involve the talents of a professional installer who knows and has experience with radiant heat, preferably a member of the Radiant Panel Association (www.radiantpanelassociation.org). You can then choose, with confidence, to what extent you'd be involved in the process.

Also, check the sites of the manufacturers listed at the end of this article. Interview a few professional installers: Be sure to ask if they belong to the RPA. Also visit one of the best sites in the industry: www.heatinghelp.com. In this site, there's a contractor locator to help you

find a top firm.

Industry References

Burnham Corporation (hydronic products) 717/397-4701 www.burnham.com

Detla-Therm (electric products) www.delta-therm.com 800/526-7887

Radiant Heat Expert Locator www.HeatingHelp.com

Radiant Panel Association www.radiantexperts.com 800/660-7187

Schluter Systems (hydronic) www.schluter.com 800/472-4588 SunTouch (electric systems) www.SunTouch.net 888/432-8932

Vanguard Piping Systems Inc. (hydronic products) www.vanguardpipe.com 800/775-5039

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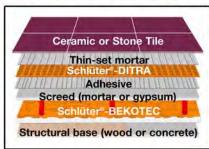
John Vastyan is president of Common Ground, Uncommon Communications, based in Manheim, Pa. He specializes in communications for the radiant heat, hydronics, plumbing and mechanical and HVAC industries.



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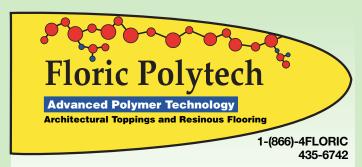
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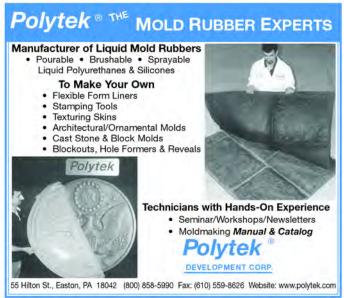
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PRODUCT PROFILE

ExStik[™] pH tester for concrete

hether you're evaluating a prospective client's existing concrete for estimating purposes or you're in the process of neutralizing a surface in preparation for resurfacing, Extech's pH tester ExStik pH100 (aka the ExStik) is a fabulous tool for identifying problem areas. The "ExStik" can be calibrated to 4, 7 or and 10, and within ten minutes can store up to 15 separate pH readings. Take about 10 minutes to collect all as much data as you can, and then chart pH levels across your entire work area, and record them for future reference. With automatic temperature compensation and a waterproof housing that allows it to float in water, the accuracy of the "ExStik" provides an excellent safeguard against potential problems that could arise with your projects. To learn more about the full line of Extech Instruments, including the "ExStik," go to www.extech.com or call (781) 890-7440.



u-Tung Cheng, award-winning designer and author of Concrete Countertops, is now offering five-day Advanced Countertop Design Trainings. Held in Berkeley, Calif., the trainings are limited to 12 participants and include hours of direct instruction by Cheng, demos and videos of techniques to execute Cheng-like designs, extensive question-and-answer sessions and the hands-on crafting of several Cheng countertop designs.

Cheng says he developed the Advanced Countertop Design Training because he believes that many countertop craftsmen could benefit from a crash course in the fundamental principles of good design, which will, in turn, help them to develop their own creativity. Cheng believes that this type of design training would give them a heads-up on competing for upscale countertop projects.

The skill required to build a mold and pour a concrete countertop is one thing, but developing the design sensitivity to craft the kind of countertop the high-end market is seeking is quite another, Cheng says. He is concerned that the use of concrete as a material of choice by designers and architects could be undermined by too many well-meaning contractors pouring what looks like "a sidewalk on top of a set of cabinets."

Design focus

The focus of Cheng's Advanced Countertop
Design Training is design in all its manifestations.
The first session, held the week of May 24, began
with several hours of design instruction. Cheng
sought to impart to the participants his overall
approach to kitchen design, walking them through
every step in his consideration of space, layout,
lighting, materials and textures, and a myriad of
other design elements. He then shifted from
kitchen design to countertop design and the
decisions he makes on form, edging, color,
decorative inlays and special features.

Cheng assigned a kitchen plan to the participants, on which they were able to sketch out their own ideas and exercise their own creativity for a countertop design. He then individually worked with them to help develop their designs. The design portion of this intensive training was also structured to give contractors insights into the thought process and vocabulary necessary to effectively communicate with architects, kitchen designers, and homeowners. Cheng emphasized that this is the key to the high-end market in countertops, a market where they're not likely to be asked, "How much do you charge per square foot?"

FOCUS ON EDUCATION:

Fu-Tung Cheng Now Offering Advanced Countertop Design Training



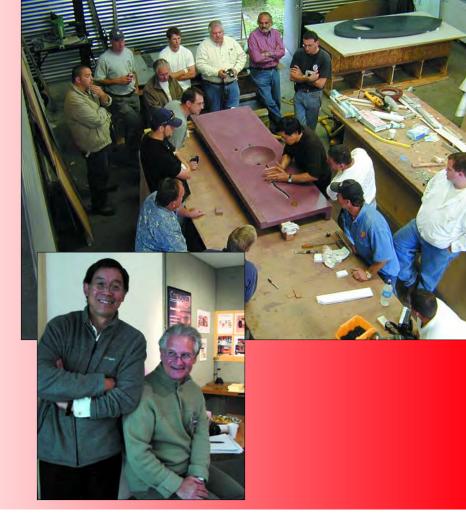


From design theory to hands-on craftsmanship

The training session moved from instruction and Q&A to a day of demos and videos that illustrated how Cheng creates various forms and features used in his countertops. The participants had the opportunity to watch Cheng blending colors to create subtle effects and then try their hand at it themselves. He also shared with the participants several trade secret processes associated with achieving the distinctive glass-like finish of the Cheng line of Geocrete countertops.

By the end of Day Two, Cheng was ready to assign the participants, working in groups of three, countertop projects he designed for the training curriculum. Each project included design features and techniques taught during the Advanced Countertop Design Training but left many of the design decisions respecting color, decorative inlays and other elements up to the participants.

On Day Three, the groups constructed their molds, built forms for knockouts, positioned and







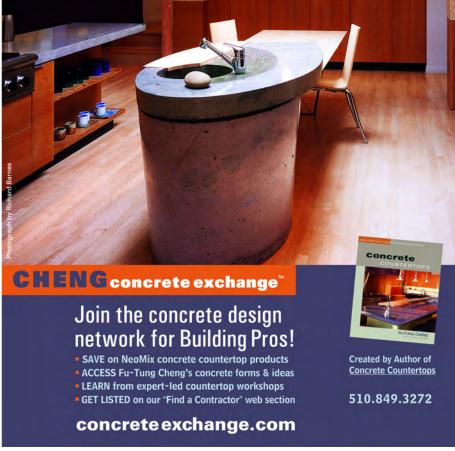
secured their decorative inlays and poured their countertops. While countertops cured, the participants engaged in a Build Your Business forum that included subjects like Countertop Pricing and Marketing to Design Professionals.

Finally, on Day Five, participants de-molded and finished their countertop projects. Cheng spent several hours critiquing the countertops with respect to both design and technical execution.

In an effort to create an elite group of concrete craftsmen, Cheng is using the Advanced Countertop Design Training as the first step toward a certification process that will require the submission of several commercial or residential projects utilizing design principles and techniques taught at the training session. Cheng-certified concrete craftsmen will be eligible to work on Cheng's commissioned concrete projects nationwide.

For information on the Advanced Countertop Design Training, call (510) 849-3272 or visit www.concreteexchange.com.





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CIRCLE #13 ON READER SERVICE CARD

Product News

Estimating software integrates with accounting programs

Quest Solutions has released Quest Estimator 6.5.5, the latest version of the company's digitized takeoff and estimating software. The update is designed to enhance the existing integration between Estimator and Intuit's line of accounting software. After building an estimate in Estimator, users can export data directly to an Intuit accounting package to include that data in billing, purchasing or other accounting functions.

For Master Builder, Quest Estimator allows the user to automatically set part-numbers, tasks, phases, cost codes and bid items. This allows the user to avoid "double entry" of data, saving time and reducing errors.

Additionally, Estimator 6.5.5 supports Quickbooks 2003 and 2004 editions. This new version of Estimator will automatically set Account Codes and build Item lists for data exported to Quickbooks. For more information about Estimator 6.5.5 or Quest Solutions, call (800) 452-2342 or write to info@questsolutions.com.

Protective coating keeps stains out

Liquitite SF, from Liquiguard Technologies, is a clear, non-flammable, water-based protective coating that will protect concrete pavers, bricks, stone, marble, metal, wood and similar everyday surfaces from staining caused by spills of all non-corrosive household liquids and other harsh materials such as automotive fluids, oils and greases.

Liquitite SF is extremely flexible and has very high bond strength. The unique resins and innovative formulation allow the coating to seep and sink into the surface, providing inside-out protection.

It has built in fungicides and UV protectors that inhibit growth of mold and mildew and prevent fading and breakdown from ultraviolet rays. It is supplied in concentrate form and should be diluted prior to use with regular tap water. It can be applied by spraying, brushing or rolling using standard equipment. Cleaning can be carried out using regular water while the coating is still wet. For more details, visit www.liquiguard.com or call (954) 566-0996.

Converter box ensures consistent vibration

Expanding its High Cycle concrete vibrator product line, Wyco Tool Company introduces the Select-Cycle Converter Box, which consistently delivers the selected vibration speed. Wyco's High Cycle products properly consolidate difficult performance-based concrete mix designs, producing dependable, uniform results.

The new Select-Cycle Converter Box ensures consistent vibration, even while under load. It provides

multi-speed capacity, allowing users to select from three vibration speeds, 8,000, 10,800, and 12,000 vibrations per minute, and holding that speed in the mix with no

surges and no significant drops. By delivering a sustained vibration speed, the Wyco Select-Cycle Converter reduces irregularities and voids in the placed concrete.

Two output receptacles are standard on the converter box, giving users



the ability to simultaneously operate and maintain the speed of two Wyco High Speed vibrators. The Select-Cycle Converter adapts 230 volt single-phase power to 230 volt 3-phase and can be powered by any standard generator 3 kilowatt or larger. For more information, visit www.wycotool.com or call (800) 233-9926.

Site offers deals on decorative concrete supplies

Silver Paw Inc. has developed a Web site designed for the decorative concrete industry. The premise behind the site was to create a place for individuals to buy and sell their decorative concrete equipment. It has since blossomed into a market place for distributors and manufacturers to sell demo equipment, discontinued items, stain supplies and stain resources such as books, videos, and stain kits.

The classified ad site is different from an auction site where buyers have to sort through knick-knacks and antiques to find what they are looking for, then bid and wait to purchase an item. On this site buyers can directly talk with the seller of the item and negotiate terms without everyone else seeing the bid.

Selling an item on the site is simple: Just pick a pricing scale and then place the ad. The ad posts automatically and the seller can make changes to their ad at any time. Check out the Web site at www.Decorative-Concrete-Classified-Ads.com.

Grinder polishes, removes dirt, adhesives and more

General Equipment has introduced a new single-head surface grinder. Designed for smaller-scale surface preparation projects, the SG12/E offers high performance, durability and ease-of-use. Powered by a totally enclosed, fan-cooled 1.5-horsepower electric motor, the SG12 features a single rotating disc with a 12-inch-wide working width. Offering a top disc rotation speed of 250 rpm, applications for the SG12 include 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 more delicate terrazzo and marble floor surfaces.

Built for portability, the SG12 includes a folding handle that makes it easier to transport. Additionally, the compact frame design and wheel position allow for simple maneuvering up and down stairwells. The handle height is also fully adjustable. For more information, call (800) 533-0524 or visit www.generalequip.com.

Urethane patch kit ideal for concrete

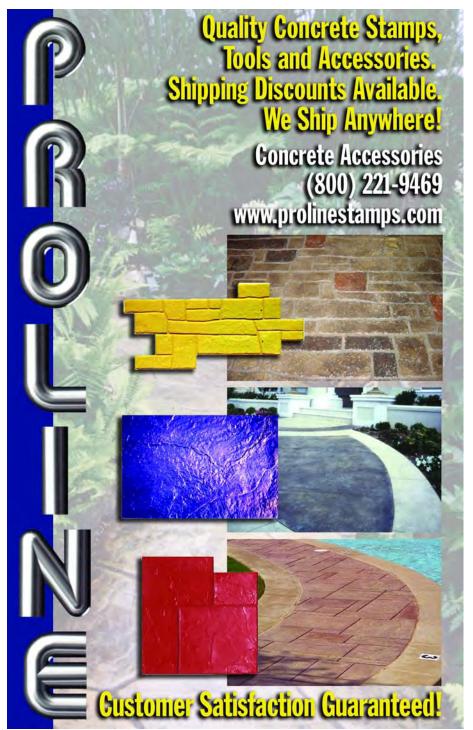
Sherwin-Williams Armorseal ExpressPatch Fast Dry Urethane Patch Kit is a low-odor, waterbased patching material that makes quick work of concrete repair with one-coat application. Ideal for patching concrete, epoxy mortar systems and urethane cement flooring systems, Armorseal ExpressPatch may also be applied over brick. The product is designed to protect concrete from thermal shock, impact corrosion, chemical attack and abrasion while offering return to service in as little as four hours. It offers no out-gassing at high film thickness, which improves appearance and eliminates film voids. It may be applied directly to damp concrete using a flat trowel at a minimum thickness of \%" to \\". No primer is required. For more information, visit www.sherwinwilliams.com.

Admixture blocks water, salt

Hycrete is an admixture formulated for any concrete that is susceptible to moisture penetration. Available from Broadview Technologies, Hycrete blocks penetration of water by forming a waxy residue that fills concrete pores. Hycrete also has a long hydrocarbon chain that repels water and makes the concrete less moisture permeable. When used with concrete that will be exposed to de-icing salts, salt penetration was reduced by over 90 percent.

Hycrete also protects steel rebar by forming a monomolecular protection layer over the steel reinforcement. Hycrete penetrates the concrete to find and attach itself to the rebar surface.

Hycrete is a water-based, non-toxic material that is easy to use. It adds entrained air of about 7 percent,



CIRCLE #67 ON READER SERVICE CARD

thereby improving freeze-thaw cycle resistance. No other air entrainment is needed. It can also be used as a sprayon application to help improve water resistance of existing concrete structures. For more information, call (973) 465-0077 or visit. www.Broadview-Tech.com.

Chart shows integral color choices

A new color chart from Scofield provides the essential resource for bringing the consistent colors of Chromix Admixtures to any vertical or horizontal construction project. The new color card doubles the number of

chips on the color card and available in hard sample sets. The "modern" palette offers expanded choices for integrally coloring concrete. More than 400 custom colors also are available by special order. For a copy of Color Chart A-312.11 for Chromix Admixtures for Color-Conditioned Concrete, email info@scofield.com or contact Scofield customer service at (800) 800-9900.

New bronze groovers from **Marshalltown**

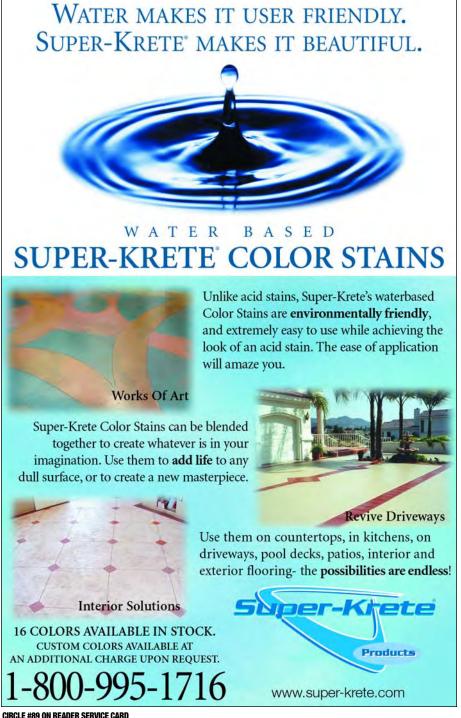
Marshalltown has added 13 new bronze groovers to its QLT by Marshalltown line of tools. This extensive new line has



a groover for virtually every job requirement. They range in size from 5½ inches by 3 inches to 8 inches by 4½ inches. They are finely finished to cut sharp, clean grooves. All feature a ¼-inch radius with the depth varying from % inch to 1½ inch. For more information, visit www.marshalltown.com.

Insulation blankets help cure concrete

The new Red Wave insulation blankets, from Ground Heaters Inc., are specifically designed for hydronic ground thawing and concrete curing applications. Constructed of a thin, yet highly effective high-tech polymer/ aluminum laminate, Red Wave insulation blankets are reflective to better direct heat downward, while the conductive material effectively transmits heat laterally. This results in even heat distribution that improves overall performance by 10 to 20 percent over traditional insulation blankets, resulting in a faster thaw or a





more uniform concrete cure.

Each 6-foot by 125-foot blanket weighs only 55 pounds. This allows for simple one-person setup, reducing labor costs and fees associated with freight. Additionally, the blankets store in one-third the space required by traditional blankets. For more information, call (231) 799-9600 or visit www.groundheaters.com.

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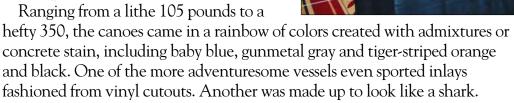




The Final Pour

Floating a Concrete Idea

wenty-two student teams from colleges and universities across North America recently traveled to Washington, D.C., to compete in the 17th annual National Concrete Canoe Competition, organized by the American Society of Civil Engineers and largely sponsored by Degussa Admixtures Inc./Master Builders. The competition focuses on speed, design, construction and overall performance.



"Every year, these students apply their classroom knowledge to a practical problem — and prove that concrete is a remarkable and versatile building material," says Degussa Admixtures president and CEO Mike Shydlowski. "Their work, during the competition and in the future, will have a tremendous impact on the building industry. This competition provides a unique opportunity for ...civil engineering students as they develop the skills to turn an unlikely design into a viable product."



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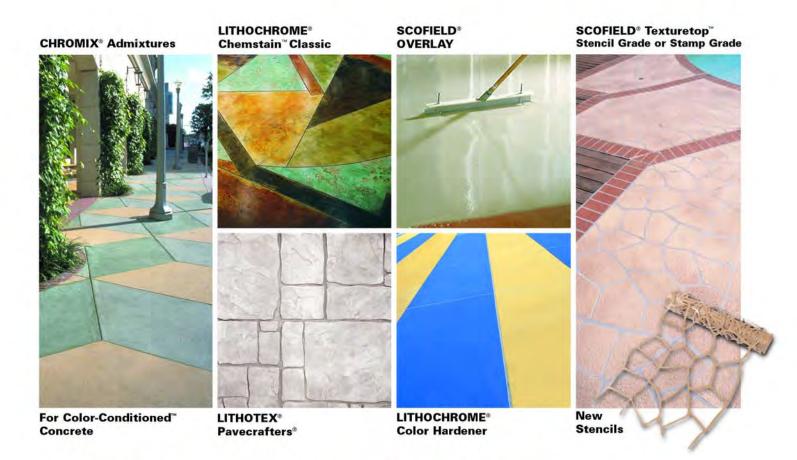


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