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August/September 2012
Volume 12 · Issue No. 6

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Subscriptions: USA (one year): $22.95
Canada (one year): $32.95
Other countries: $64
All prices in U.S. dollars

Subscriber Services: (877) 935-8906
circulation@protradepub.com
Fax: (541) 341-6443

U.S. Postal Service Mailing Address: Professional Trade Publications Inc.
P.O. Box 25210
Eugene, OR 97402

Other Shipping: Professional Trade Publications Inc.
228 Grimes St.
Eugene, OR 97402

Concrete Decor™ The Journal of Decorative Concrete is published eight times a year by Professional Trade Publications Inc. Bulk rate postage paid at Lebanon Junction, Ky., and additional mailing offices.

ISSN 1542-1597

NPCPA
Decorative Concrete Council
AIBD American Institute of Building Design
International Concrete Repair Institute
aci American Concrete Institute

publisher's LETTER

Dear Readers,

From the day in 1999 that I stumbled onto a decorative concrete project in the small mountain town of Murphys, Calif., and discovered that the color of concrete could be transformed with stains, I haven't taken my attention off this building material. Twelve years later, I remain impressed by the growing range of colors, the widening array of applications, and the industry's tenacity in overcoming one of our nation's toughest economic declines.

However, what impresses me most are the people in this industry. Sheri and I just attended the wedding of Jeff and Michelle Kudrick (of JM Lifestyles LLC) in Pennsylvania, and in the midst of all that fun I had a moment to reflect on where this industry has taken me and the wonderful way it has enriched my life with so many enjoyable people.

Here's another example of that. A few months ago, while answering a request on LinkedIn, I stumbled upon a company website that showcased a pink ribbon with the inscription "pinkrete." Further inquiry led to an exchange of emails with the company owner, Karen Frazer.

A week later I was having lunch with Christy Martin, executive director of the Concrete Promotional Group of Kansas City, where she informed me that our good friend Mike Murray, of Murray Decorative Concrete Supply Inc., had come up with an idea to place pink concrete in all 50 states in the month of October in an effort to raise awareness and dollars "for the cure." It was only a week after his idea was made public that Mike's wife Donna discovered she would now begin her own battle with cancer.

Today, with help from Chris Sullivan, me, and a host of industry organizations, Mike's vision is turning into a reality. Last I heard, more than 30 industry volunteers in 30 states had secured sites and resources for pink concrete placements.

After the wedding in Pennsylvania, Sheri and I traveled to Charlotte, N.C., to conduct an Informational Meeting in preparation for the 2013 Concrete Decor Show, to be held March 11-15. Here, I met Karen Frazer and her husband James for the first time, and we decided to hold a "pinkrete" pink concrete silent auction in conjunction with next year's show. Details for participating will be found in our October issue.

Also at this meeting, it was unanimously decided that the Charlotte Rescue Mission will be the benefactor of our Spring Training program during the week of the show.

You may or may not have had the same introduction to the decorative concrete industry that I had, but since that time in 1999 I hope you can see why I am so impressed with this industry — and its people.

2 Corinthians 9:6

Keep up the good work!

Sincerely,

Bent Mikkelsen
Publisher

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FEATURES

BUSINESS & INDUSTRY

On the cover: An artisan with Unique Concrete, of West Milford, N.J., hand-chisels a border. The company has found that stamping with hand tools and "cookie cutters" instead of mats gives them room for flexibility and creativity. For a description of their techniques, see page 48.

Photo courtesy of Unique Concrete

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Doug Carlton *operates Carlton Concrete Inc. in Visalia, Calif. He can be reached at carltondoug@comcast.net. See Doug's column, "Carlton's Corner," on page 18.*

Jennifer A. Faller *is business development manager for Vexcon Chemicals and lead trainer for the Certi-Shine brand of polished concrete materials. Contact her at jfaller@vexcon.com. See Jennifer's column on page 36.*

Todd Fisher *works on installs, research and development and online marketing for Unique Concrete, based in West Milford, N.J. He can be reached at todd@uniqueconcretenj.com. See Todd's article on page 46.*

Jeffrey Girard *is founder and president of The Concrete Countertop Institute and a pioneer of engineered concrete countertops. He can be reached at info@concretecountertopinstitute.com. See Jeffrey's column on page 27.*

Chris Sullivan *is vice president of sales and marketing with ChemSystems Inc. He has led seminars and product demonstrations throughout North America. Contact him at trowelanderror@protradepub.com. See Chris' column on page 42.*

Jacob Webb, *MBA, is a small-business strategy consultant and co-founder and vice president of NewLook International Inc., where he is primarily responsible for business development, sales and marketing. Reach him at jacob@getnewlook.com. See Jacob's column, "Fundamentals of Business," on page 12.*

Talk back! Weigh in online at ConcreteDecor.net

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business & INDUSTRY

INDUSTRY NEWS

West Coast Training Center teaches decorative concrete in Oregon

Nathan Giffin and his company Vertical Artisans have founded a West Coast Training Center to coincide with the creation of the Underground Concrete House, in Lorane, Ore. Over the next two years, the aging house will be restored using various decorative concrete techniques, including vertical applications, overlays and countertops.

Nolan Scheid, owner of the Underground Concrete House, will team up with Giffin to bring artisans from around the country to train, learn and socialize. The work done by individuals attending classes at the West Coast Training Center will be part of a permanent and long-term showcase at the House.

The inaugural training sessions will take place Sept. 27 through Oct. 5 and be taught by Giffin and Mike Vernelson of Vertical Artisans.

verticalartisans.ning.com/group/west-coast-training-center

Concrete master Brandon Gore wins Dwell on Design award for chair

Winners have been announced for the second annual Dwell on Design Awards. Winning the furniture category was the Muskoka chair from Hard Goods, a new venture of concrete artisan Brandon Gore.

The Muskoka chair is meant to resemble a classic Adirondack chair in angles and proportion, if not much else. It is made of weatherproof concrete on steel legs and weighs half as much as a sofa.

Over the past six years, Dwell on Design has grown in size and stature to become a leading showcase for the modern design community.

www.dwell.com/articles/Dwell-on-Design-Award-Winners-2012.html

www.hard-goods.com

Powerhold distributors in Canada agree to stock Ardex products

Ardex Americas has partnered with the Powerhold network, improving distribution of Ardex and Henry products in Alberta, British Columbia, Saskatchewan, Manitoba and Ontario.

Powerhold is the brand representing the 18 distributors in the Floor Covering Distributor Alliance. These wholesale floor-covering distributors sell all of the products needed to install any type of flooring. Ardex products will be carried by all 18 distributors.

(888) 512-7339

www.ardexamericas.com

New app from Concrete Coatings

Concrete Coatings Inc. has developed a new Android app called Coatfolio.

Coatfolio has been designed to be a digital coatings portfolio. It can be used to research Concrete Coatings products, estimate jobs and organize projects.

Add Concrete Coatings products to your estimates to see how much the job will cost based on the suggested retail price. Enter the measurements of your project and Coatfolio will tell you how much square footage you have and how much product

event calendar

Tilt-Up Concrete Association Annual Convention
Oct. 2-4, Amelia Island, Fla.
www.tilt-up.org

American Concrete Institute Fall 2012 Convention
Oct. 21-25, Toronto, Ontario
www.aciconvention.org

you'll need. Keep track of all of your projects and their details, including client contact information.

www.concretecoatingsinc.com/coatfolio

Distributors fill orders at NewLook's new online store

NewLook International Inc. has launched a new online store where customer purchases are actually fulfilled by authorized NewLook distributors.

Customers can access the store from NewLook's website and purchase most of the company's specialty or industrial products. The order fulfillment process is like most other e-commerce solutions with one exception — the orders are made available to and fulfilled by participating NewLook distributors. Once the order is awarded to registered distributors, it will be shipped to the customer within 24 hours.

NewLook is utilizing a unique online platform from Shopatron. Distributors are not required or obligated to register with Shopatron, and customers may continue to purchase directly from their local distributors instead of from NewLook's online store.

www.getnewlook.com

Coatings for Industry announces deal with Wooster

Coatings for Industry, a direct-to-contractor supplier of industrial coating products, has entered into an agreement with The Wooster Brush Co. to offer the paint equipment supplier's products to its own network of contractors.

Now CFI's customers have access to high-performance coatings and many of the tools needed to apply them from one source.

Wooster equipment will be delivered alongside CFI's own primers, sealers and topcoats.

www.coating4ind.com

Moderne Methode opens subsidiary to serve Indian Ocean region

Moderne Methode SAS, manufacturer and distributor of innovative products and systems for decorative concrete, has opened a subsidiary in Saint-Pierre, on the island of Reunion in the Indian Ocean. The new company, Southern Concrete SAS, whose commercial name is Moderne Methode Indian Ocean, distributes the full range of Moderne Methode products. A manufacturing unit will be opened at a later date.

The associate director of the new company is Sebastian Liotard, an experienced applicator and distributor. He is responsible for the management and development of Southern Concrete SAS in Reunion and in neighboring countries and territories.

www.moderne-methode.com

Concrete industry associations partner to form certification consortium

In an effort to increase the awareness of certification opportunities for concrete professionals while promoting the advantages of such programs, eight concrete associations have joined forces to form the Concrete Industry Certification Consortium (CICC).

Comprised of the American Concrete Pumping Association, Architectural Precast Association, Concrete Foundations Association, Concrete Sawing and Drilling Association, International Concrete Repair Institute, National Precast Concrete Association, Post-Tensioning Institute and Tilt-Up Concrete Association, the Concrete Industry Certification Consortium is a nonprofit clearinghouse dedicated to serving those interested in improving the quality and safety of concrete construction and renovation.

(319) 895-6911

Portland Cement Association nearly doubles 2012 cement use projections

With the first half of 2012 seeing favorable weather conditions, gains in residential and nonresidential construction activity and robust gains in cement intensities, the new forecast from the Portland Cement Association (PCA) nearly doubles the expected increase in cement consumption for the year.

PCA revised its spring forecast upward, anticipating a 6.9-percent increase in 2012 from 2011 levels, followed by a jump of 5.8 percent in 2013 and a double-digit increase of 10.9 percent in 2014.

The forecast points to both changes in construction activity and cement intensity as the key contributors to cement consumption growth. Cement intensity is the amount of cement used per real dollar of construction activity. Because cement usage is greatest at the early stages of a construction project, PCA estimates that the drop in construction starts was responsible for roughly 75 percent of the cement declines during the recession.

www.cement.org

ACI announces winning universities

The American Concrete Institute has announced winners of the ACI Award for University Student Activities program, designed to recognize universities whose students and faculty are active in ACI and other concrete-related activities.

The full list of winners can be found on the award program's dedicated webpage.

www.universityaward.concrete.org

Cemstone plants recognized by NRMCA

Cemstone, an Upper Midwest leader in ready-mix, engineered and decorative concrete, has earned Green-Star Certification by the National Ready Mixed Concrete Association for its Childs Road

batch plant facility in St. Paul, Minn., and its batch plant facility in Northfield, Minn.

The NRMCA Green-Star Program recognizes facilities that have achieved environmental excellence through the use of an Environmental Management System.

www.cemstone.com

Arizona Polymer Flooring announces new technical director

Arizona Polymer Flooring has hired Jim Essig as technical director. He is based at the plant's headquarters in Glendale, Ariz.

Essig will be responsible for managing all aspects of research and development, from formulating new products to implementing best practices and quality control.

www.apfepoxy.com

Photos courtesy of Artistic Concrete Coatings

L.J. Ickes and Joe Quick, Artistic Concrete Coatings

Wapakoneta, Ohio

by Chris Mayo

If you're a contractor, how do you handle tough economic times and a downturn in business? Over the past few years, many contractors have circled their wagons — even taking the occasional break-even or money-losing job as a way to keep their crews busy and their doors open. Stories about good, quality contractors going out of business have not been uncommon during our current economic doldrums.

In 2008, L.J. Ickes and Joe Quick, brothers and co-owners of Artistic Concrete Coatings Inc. in Wapakoneta, Ohio, took a look at the economy and decided it was time to diversify their business. They already had a unique arrangement. Ickes was the hands-on guy, installing decorative concrete, and Quick ran the distribution side of the business, marketing and selling concrete sealers and stains. Even though the business was holding its own, Quick wanted to develop his own line of products. In late 2009, they unveiled a line of specialty concrete products under the brand The Concrete Protector.

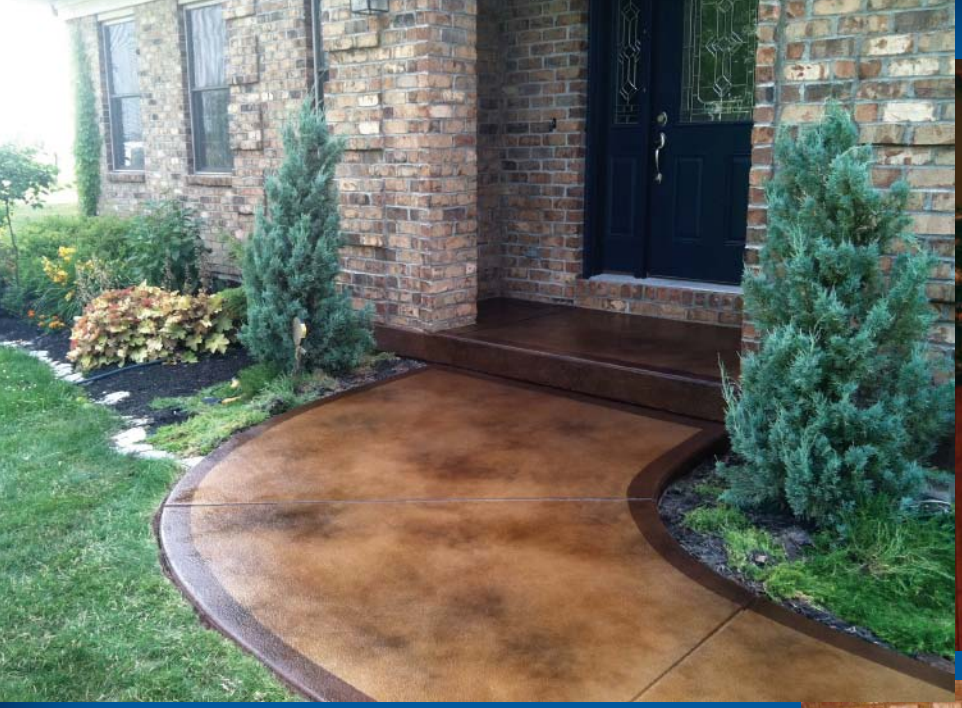
Change is what they do. Quick and Ickes started in business together in 1998 as a commercial pressure washing company. After attending a decorative concrete training event in 2000, they decided to go in that direction.

"It wasn't long after we started doing decorative concrete that we realized there was a market for distribution of quality concrete products," says Quick. "I guess we both have a bit of the perfectionist in us, and the varying quality of specialty concrete products, like sealers, dyes and stains, was pretty annoying. Manufacturing companies seemed to all claim that they had the best product on the market, but in practice, we never knew if a product was going to perform as advertised until we actually used it. Quite often, the products simply didn't perform."

The brothers decided that when they found a product that worked, they wanted to share it with other contractors. They became distributors of products that they believed in. In addition to distributing products, they developed training programs and a troubleshooting hotline.

"It has worked out really well," says Quick. "L.J. prefers the installation side of the business, and I like the distribution and training aspects. We started out distributing penetrating sealers and equipment. We started the training programs shortly after that."

The beauty of the arrangement between the brothers is that they won't sell a product until Ickes tries it out and gives it his seal of approval. And Ickes is no run-of-the-mill installer. His work with simulated hardwood



flooring was featured in the Artistry in Decorative Concrete demos at the 2011 World of Concrete trade show in Las Vegas.

Though both admit they occasionally butt heads, they appreciate each other's skills.

"There have been times when I've really liked a product and wanted to arrange a distribution agreement, but L.J. advised against it, sometimes adamantly. We've had a few moments of brotherly disagreement," says Quick. "In the end though, I'm always confident that if he likes a product other contractors will too."

One thing they have always agreed on is constantly experimenting and expanding.

"We might not always agree on how to go about trying new things, but it seems like it always works out in the end," says Ickes.

The leap into manufacturing

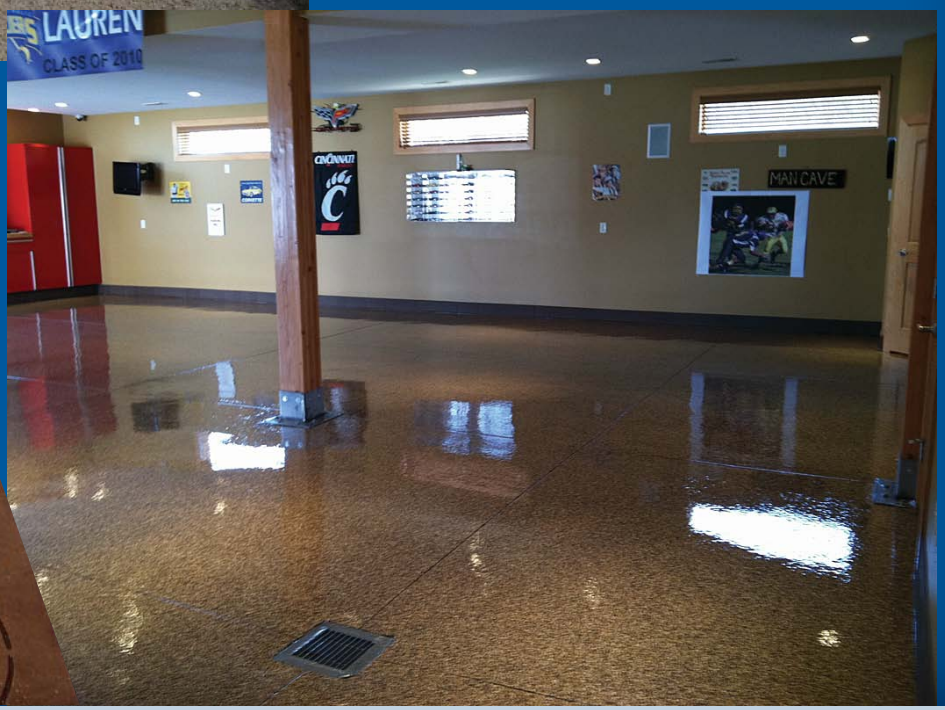
"We absolutely had to be in agreement when we decided to make the leap into manufacturing our own products," says Quick. "We knew it was going to be a long process with a lot of trial and error. We didn't know it would take two years and about $100,000."

The brothers reduced their own salaries to the bare minimum. They asked the installation side of the business to pick up the slack during the product development process. The installation crew bought in wholeheartedly.

"We couldn't have done this without the support of our employees," says Quick. "They carried us during a pretty tense two years."

Quick knew what he wanted: a product line of sealers and sealer/stain combinations that wouldn't wear away in a few short years, creating a need for constant reapplication. He wanted something that would make concrete easier to clean and be salt-resistant, UV-resistant, stain-resistant and environmentally responsible.

"In the end, our team of chemists and other experts came through, and now we offer a line of products that we believe can stand up against any in the industry," says Quick.



After two years of trials, samples and field tests, Quick unveiled The Concrete Protector line of sealers in 2009.

If the simulated hardwood floors are a signature of the installation side of the business, customer service and training is the signature of the manufacturing and distribution side. Quick and Ickes understand that no matter how good a sealer or stain is, there are always going to be competing companies offering high-quality products. Consequently, they decided to offer 24-hour, 7-days-a-week customer support.

They are also dedicated to delivering as quickly as possible.

"We know we have a good product," says Ickes. "But I think what sets us apart is the service that goes with it. If someone calls with an installation issue, either I or one of my more experienced crew members gets back to them within an hour."

Paul Bowser, owner of Artistic Concrete Coatings, an unaffiliated company in Kansas City, Mo., collaborates with Quick to test new products. "Whenever Joe develops something new, I know L.J. uses it first, and if he likes it then I and a guy on the East Coast try it to see how it stands up in different climates. It seems like Joe is always testing and researching something. What I really appreciate is how quick he is to jump on any issues that come up."

And Ickes continues to innovate on the artistic side, often using the products that he and Quick developed. "Some of my favorite techniques are The Concrete Protector's Metallic Stain and Epoxy Tile," he says. "We've also recently developed a Stained Venetian and Tuscan Slate Tile, as well as Protector Image Logos."

More than the techniques, Ickes simply seems to enjoy creating unique finished work. "Joe and I definitely approach business differently. That, however, is the secret to our successful business model," he says. "I approach each floor like an artist approaches a canvas, giving each customer a one-of-a-kind floor that they can enjoy for a long time."

www.artisticconcretecoatings.com

FUNDAMENTALS OF BUSINESS

Managing Slack is Essential to Your Business

by Jacob Webb

There is a big hairy monster lurking around your business. He's not easy to detect and he has a real nasty habit of stealing from you. The monster I speak of is called "slack" and if you don't kill him, he will eventually have an irreversible impact on your bottom line.

Slack is simply another word for waste and inefficiency, particularly in the supplier-customer relationship within the vertical supply chain. He can surprise you at just about any point and manifest himself in numerous ways. Mis-specified purchase orders. Employee accidents. Wasted product. Slack can be just about anywhere.

To better understand how to contain such a beast, we must first understand the nature of a vertical supply chain.

The supply chain is a system of firms, people, technologies, resources and activities, all of which are involved in moving a good (or service) from the raw-material supplier down to the consumer. Think of your installation business as one of several steppingstones in the proverbial path that a product takes from the supplier to the property owners. This process essentially converts raw ingredients into a finished product that is delivered to your customers, the property owner. Whether you recognize it or not, you are one of several intermediaries that participate in this process.

The interaction and exchange between a supplier and customer is a breeding ground for slack.

One of the main purposes of an intermediary is to break down bulk. Manufacturers such as my company, NewLook International, purchase large volumes of raw materials and then combine them with other raw ingredients to produce a finished product. Distributors and retailers stock relatively high volumes of the finished product so you, the decorative concrete contractor, and your counterparts don't have to purchase high volumes when you only need a few units.

When each member of the supply chain honors their proper role, economies of scale are advantageous. However, those intermediaries who complicate things compromise what should be a mutually beneficial supplier-customer relationship.

Consider the specialty concrete distributor who chooses to promote a wide range of product solutions. This is not necessarily a bad thing. In fact, it may be appropriate for some markets that demand a broader range of solutions. But their cash flow may not allow them to stock sufficient amounts of everything in their wide range to meet the needs of a small niche market like decorative concrete work. As a result, the distributor's cost per unit would typically go up. And when a distributor has to pay a premium, they usually pass those premiums on to you. In fact, premium prices are often indicative of inefficiency in the supply chain — slack.

Slack rears his ugly head in many other ways. You can smell him when a customer

mis-specifies an order or changes their mind about a color at the last minute. You can hear him when your installation crew causes scrap or rework. You can see him when your advertising campaign does not yield new job prospects. And you can feel him breathing down your neck when your distributor puts off submitting a PO to the manufacturer. Slack is everywhere and he reeks of profit loss.

Ways to reduce slack

Tell slack to take a hike by aligning incentives that motivate all players in the supply chain to reduce waste. Your employees, for example, can be motivated by linking their pay to low slack. This may be a bonus or some type of attaboy that is important to your workers.

One of my NewLook's Certified Installers, for example, rewards his installation crew with movie tickets for every 10 successful projects they complete without error or lost-time accidents. This has helped to eliminate unnecessary scrap, waste and rework.

Develop programs for your installation crew that emphasize safety. This can help reduce lost-time accidents, which will have a direct impact on both your top and bottom line.

Programs that offer buyers and sellers incentives to reduce or eliminate slack are also important. Your distributor wants large-order quantities and advance notice. In addition to discounted pricing, you want undamaged product made available in a timely manner. When an agreement with ironclad purchasing terms is in place — one that accommodates both your needs and the needs of your distributor — you establish efficiency in the supplier-customer relationship and prevent slack from causing unnecessary damage to your bottom line.

There are any number of programs and initiatives that will help minimize slack and increase efficiency within the supply chain. Here are several more examples.

Monitoring your mileage to and from job sites can help identify wasted gas and inefficient use of time, both of which negatively impact profitability.

Participating in manufacturer trainings and demonstrations can give you the product knowledge needed to select the appropriate solution for your jobs. Imagine how much money you'd lose if you constantly suggested the wrong products to all your customers. This will also prevent you from wasting time waiting for replacement product.

Employee performance reviews can give your team a positive direction and keep them from losing the much-needed focus that drives growth.

Processing employee background checks and interviewing employee references can help reduce turnover and minimize liabilities.

Taking trade references seriously can also minimize slack. Doing business with customers with healthy credit histories can keep your accounts receivables and accounts payables in balance.

Finally, **developing measurable marketing campaigns** leads to greater confidence in a return on your marketing investments.

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

Photo courtesy of Doug Carlton

CARLTON'S CORNER

The Hottest Trend of 2012: Concrete Restoration

by Doug Carlton

I don't know Dan that well, but every time I see him, he looks tired and has a huge smile. Dan owns and operates an auto repair shop not far from my house, and I drive by it each day on my way into town. Lately, Dan's parking area is so stuffed full of waiting cars that his business spills into the space of the business next door. Dan is tapping into the profitable market of repair and restoration and probably has no idea why his business is prospering while other businesses aren't.

Are you in decorative concrete and looking for more work? I bet you are, and if so, I have some good news. Dan's auto repair business is trying to tell the construction industry, as a whole, something that each of us should look into.

The trend for 2012 is restoration, and if we invest a little thought, we will see that it makes perfect sense. Fewer folks are buying new things, and that includes new homes. Fewer developers are building new strip malls too. This means today's trend is less about new construction and more about patching up the old.

Do you realize millions of square feet of decorative concrete were created over the last 10 years? I recall being interviewed by a construction magazine about 20 years ago and being asked a question pertaining to the future of decorative concrete. My answer was something like, "I believe we will see a day, a day soon in fact, when all companies connected with concrete construction will have at least one person who specializes in decorative concrete. I also believe decorative concrete will be the fastest-growing segment within the concrete industry."

Of course, our decorative concrete industry has exploded in popularity over the last two decades, far beyond the prediction I made 20 years ago. This means billions of dollars of colored, textured, polished and topped decorative concrete lie waiting for rebuilding, repairing, refreshing and restoring.

What's more, this profitable fruit is as rich for the picking as the decorative concrete industry was 20 years ago, in its original infancy stage.

You can't bring the construction craze of yesterday back to life — sorry. But you can capitalize on a new trend of concrete restoration while other contractors are kicking the dirt in disgust.

What compounds this opportunity is that many companies that originally installed some decorative concrete projects are no longer in business or have no desire to develop a restoration side. This fact only increases the need for companies that are willing to retool themselves toward the restoration side right now.

Getting started

Everything great starts with a first step and concrete restoration is no different. I can't honestly plug away at this keyboard and perfectly define "concrete restoration." It's just too broad and, as a field, it's still developing. What I can say is that each one of you reading this has an opportunity in one capacity or another depending on your region.

The first step is to define, according to your market or region, what types of decorative concrete "went down" over the last few years. Look around and ask yourself if that decorative concrete needs resealing, repairing, recoloring or rejuvenating.

I have found before-and-after photos work well to promote concrete restoration.

Go outside your initial base

I don't recommend limiting this effort to your list of former customers. The restoration side of decorative concrete is so wide open because few contractors service past projects. Most decorative concrete projects do not have a restoration or maintenance plan in place.

Also, your restoration venture should include all forms of decorative concrete restoration, which in return will establish your company as the restoration professional and local expert.

Don't just restore decorative

Finally, don't limit yourself to strictly decorative concrete restoration. Acres of gray concrete need cracks repaired and surfaces reborn. I realize most of our readers love to work within the craft and art of today's colorful decorative concrete industry, but the goal for 2012 and 2013 must include profit and business sustainability. This may require some of you to expand beyond the banks of decorative concrete.

I will talk more about concrete restoration in the future, but feel free to email me for more pinpointed ideas and steps to kick-start your business into the forefront of this growing trend.

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

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Miracote, Div. of Crossfield Products	11	10
Proline Concrete Tools	11	11
Versatile Building Products/Garage Experts	3	12
Xtreme Polishing Systems	Inside Front Cover	13

DEPARTMENTS

concrete coatings

Aquafin, Inc.	23	14
Arizona Polymer Flooring	24	15
Clemons Concrete Coatings	23	16
Franmar Chemical	22	17
McKinnon Materials	21	18
Miracote, Div. of Crossfield Products	22	19
Quest Building Products	23	20
Versatile Building Products/Garage Experts	23	21

countertops & precast

Infinicrete	29	22
Proline Concrete Tools	29	23
Trinic LLC	29	24
Versatile Building Products/Garage Experts	28	25
Walttools/The Contractor Source	28	26

fresh concrete

Butterfield Color	31	27
Ralston Concrete	30	28

grinding & polishing

Aztec Products Inc.	34	29
Braxton-Bragg	39	30
Diamatic USA	38	31
EDCO - Equipment Development Co.	37	32
GelMaxx	39	33
In 2 Crete	35	34
Innovatech Inc.	34	35
NewLook International Inc.	39	36

ADVERTISER	PAGE	RS#
Nufinish Corporation	33	37
Polished Concrete Solutions	36	38
Riviera Brush Company	34	39
Trinic LLC	34	40

overlays & toppings

Countertop Solutions	41	41
Kemiko Decorative & Industrial Coatings	41	42
Performance Polymers LLC	40	43

staining & coloring

Diamatic USA	44	44
GG Innovative Products Inc.	45	45
Lythic Solutions Inc.	43	46
Modello Designs	44	47
NewLook International Inc.	45	48
Preval Spray Guns	43	49
Riviera Brush Company	43	50
SP Systems International Inc.	43	51
Versatile Building Products/Garage Experts	42	52

stamping & texturing

Butterfield Color	51	53
Concrete Product Resource	48	54
Concrete Texturing Tool & Supply	51	55
Kingdom Products	52	56
Matcrete	50	57
Pacific Concrete Images	47	58
Performance Polymers LLC	50	59
Polytek Development Corp.	50	60
Proline Concrete Tools	47	61
Super Stone	49	62
Walttools/The Contractor Source	47	63

walls & hardscapes

Pacific Asset Development/Mortarsprayer	56	64

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PROJECT PROFILE

Calvary Christian School Art Room, Holland, Mich.

by Stacey Enesey Klemenc

What better place is there to experiment with various decorative concrete techniques than in a high-school art classroom?

That's the question Troy Lemon, president of Cornerstone Decorative Concrete, asked himself six years ago when he came up with a plan for the classroom in the high-school section of Calvary Christian School, in his hometown of Holland, Mich.

He was just itching to try out some of the things that Bob Harris of the Decorative Concrete Institute in Georgia had showed him. After Lemon finished a class on decorative overlays, Harris pulled him aside and showed him some metallic colorants Harris had been playing with. Soon after, Harris sent over some samples so Lemon could play on his own.

And Lemon liked his results.

So a little later, when the opportunity came up to do some pro bono work for the Christian school, he showed the art teacher, the principal and the board of directors some metallic sample boards and some rough sketches of what he planned to do. "And they got really excited and told me I could do whatever I wanted," he remembers. "Sometimes when you're working with a board, it's like pulling teeth to get them all to agree to something. But this project was decided on in less than an hour."

It would be his first real experience with metallics, a material he's since mastered. (His metallics work was featured on the cover of the July 2012 edition of *Concrete Decor*.)

Photos courtesy of Cornerstone Decorative Concrete

Putting the metal to the petal

After priming the floor and letting it cure, Lemon and his three-man crew started at the door and worked their way into the classroom. First, they troweled an area with 10 to 15 mils of Key Luster Metallic Antique Silver, a dark silver metallic epoxy blend from Key Resin Co. Then, wearing spikes, they randomly squirted heavy lines of black epoxy using plastic ketchup bottles while the silver was still wet, allowing the black squiggles to flow and form nondescript shapes. Beyond this section, the men squirted a lighter application of the black epoxy to form overlapping circular shapes. They also applied additional silver as needed.

"As we went out, the gray and black section became more defined," more closely resembling the look of tightly packed sunflower seeds, Lemon says.

As a final touch, Lemon troweled a color-shifting product from the Decorative Concrete Institute called Viola Fantasy over the silver section after it had dried. "When you walk by, the silver changes into various hues ranging from purple to brown," he says. Harris calls it a "flip-flop" effect.

Next up was the section Lemon devised to look like the yellow petals of a sunflower. He mixed silver metallic powder made for plaster finishes with a white-tinted epoxy to create a pearlescent white. He put this

Project at a Glance

Client: Calvary Christian School, Holland, Mich.

Decorative Concrete Contractor: Troy Lemon, president, Cornerstone Decorative Concrete, Holland, Mich.

Scope of Project: To finish a high-school classroom floor using metallic coatings and various manipulation techniques

Materials Used: Key Luster Metallic epoxy in Antique Silver, Brass, Bronze and Copper from Key Resin Co., Viola Fantasy colorant from the Decorative Concrete Institute, polyurea from Versatile Building Products

Challenge: Staying squatted so long while filling in the yellow petals

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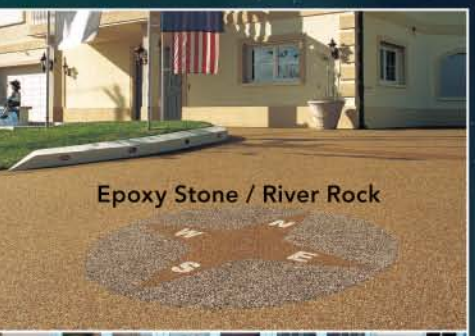
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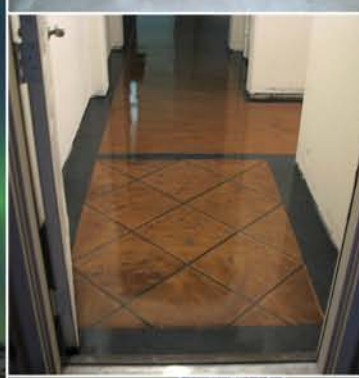

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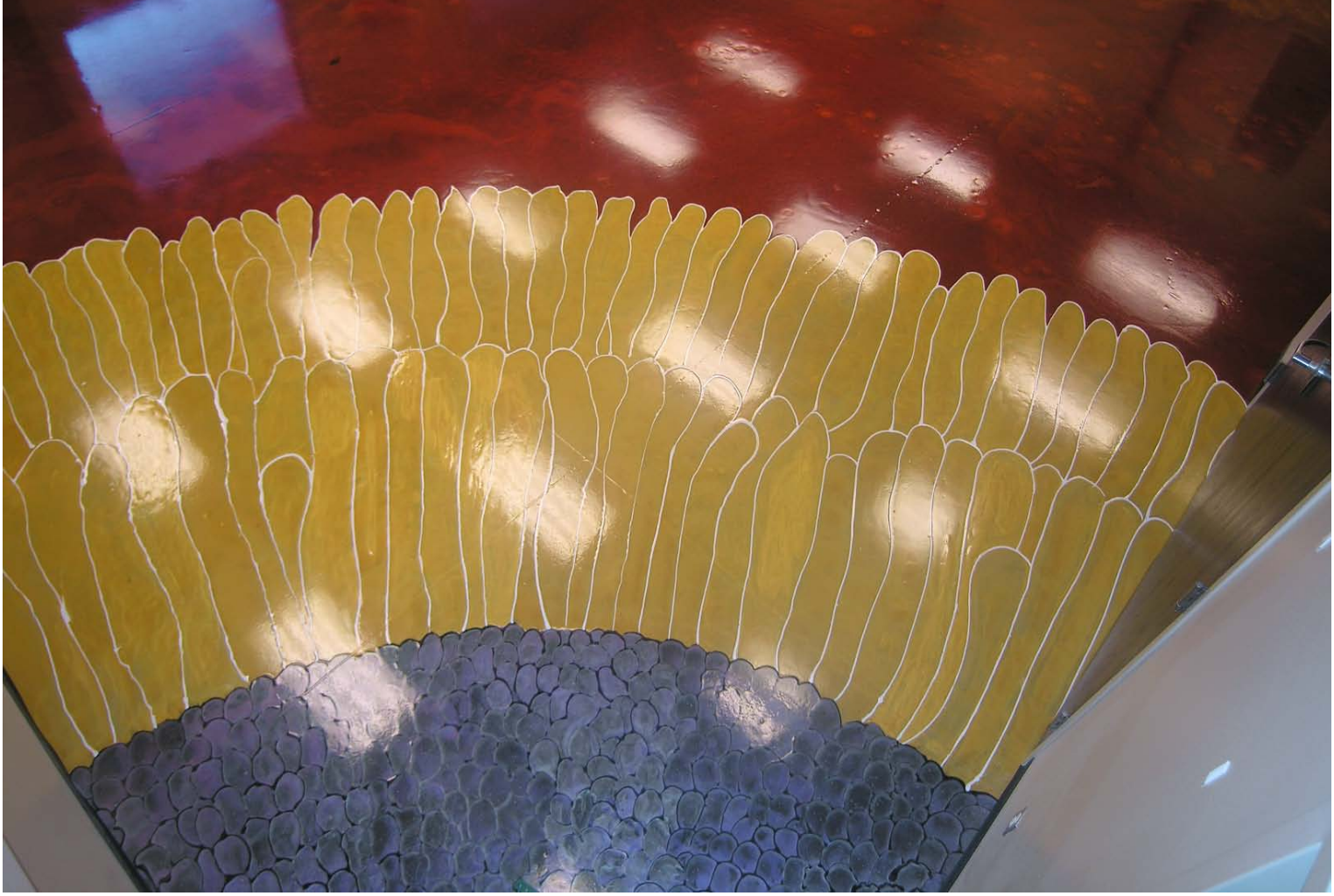


mixture into a ketchup squirt bottle and outlined the petals. Then he and his men painstakingly filled in each petal with a very yellow metallic coating, Key Luster Metallic Brass.

Finally, the section that looks orange and red was poured using Key Luster Metallic Copper and Bronze. While the coatings were still wet, "we pulled them back and forth into each other so we would get uneven lines," Lemon says. They also spritzed the surface with acetone to get a hammered look.

In hindsight

The classroom project took about four days to complete, Lemon recalls: a day of prep, a day and a half for the yellow section (ouch!), a half day for the other sections and

PRODUCT NEWS

A new UV-resistant urethane topcoat from Dur-A-Flex

Dur-A-Flex Inc. has announced the addition of Poly-Crete Color-Fast topcoat to its line of cementitious urethane flooring systems. Formulated to retain its color throughout the life of the floor, this UV-resistant topcoat is a critical component of the Poly-Crete flooring system, used most notably in the food, beverage, pharmaceutical and chemical industries.

www.dur-a-flex.com

a day to "clear it out" (put on the topcoat).

If he had it to do over, he would have done the yellow section differently. "We outlined the petals first and then filled in every one by hand. That, literally, was a pain in the butt," Lemon says. "Our muscles started aching after an hour of having to squat and paint. We should have done a base color first and then went over it with the outlines. That would have saved a ton of time." He estimates that it took a whopping 14 man-hours to color the petals.

What made the process even more uncomfortable, he continues, were the crew's platform spike shoes. "They didn't move with our feet at all," he laments. "We were miserable." Since then, they've discovered flexible spike shoes from Midwest Rake Co. "And they make such a difference."

Lemon was recently called back to the project he completed in 2006 to sand down scratches caused by classroom chairs and apply a new clear topcoat. "We just sanded and recoated. There were no repairs," he says.

All in all, the floor today looks just as good as it did on day one. "It's a blessing that we're able to do fun things and be creative while doing them," Lemon says.

"And while we appreciate all the attention we get from using these amazing products, it wouldn't be possible without the chemists behind them. They're really the ones responsible for all this stuff and they never get any credit."

www.cd-concrete.com

PRODUCT NEWS

Dur-A-Flex launches two new decorative flooring systems

Dur-A-Flex Inc. has announced Mica-Flex E and Mica-Flex M as the newest products in its lineup of decorative flooring systems. The new Mica-Flex systems utilize Dur-A-Flex's proven epoxy and methyl methacrylate (MMA) resins in combination with the unique look of natural mica flakes.

Mica-Flex E is a 1/16-inch epoxy-based broadcast system finished with Dur-A-Flex's hard-wearing Armor Top urethane topcoat. Mica-Flex M is a 1/16-inch all-MMA broadcast system.

With a natural, metallic luster, the Mica-Flake systems' UV stability ensures consistent color for the life of the floor. Both systems are available in six standard colors and three blends of micro and macro sizes.

www.dur-a-flex.com

Low-VOC sealer promises less bubbling

ChemMasters Inc. has introduced a low-VOC decorative concrete sealer that provides 200 to 300 percent more working time during application. Stamped & Decorative Concrete Sealer 400A is specifically formulated to be slow-evaporating for easier application and to eliminate bubbles associated with the fast-drying solvents commonly used in low-VOC sealers.

The sealer provides a high-gloss look while also imparting resistance to aliphatic solvents, acids, alkalis, gasoline, oils and grease. It is solvent-based, meeting the low-VOC requirements of Canada, the Ozone Transport Commission, the Lake Michigan Air Directors Consortium and others. It will seal and protect stamped concrete, exposed aggregate, terrazzo and man-made or natural stone. It beautifies and protects concrete while shielding it from water, freeze/thaw damage, dirt and most hydrocarbon chemicals. It has excellent penetration, adhesion and durability.

www.chemmasters.net

Clemons sealer stripper in metal can

Clemons Concrete Coatings is now offering its Super Sealer Stripper in a 1-gallon metal can.

Although the stripper in the metal can is a slightly less powerful formula than that in the popular green container, it is ideal for small jobs where less product is necessary. The metal can also allows for easy transportation and can be shelved safely.

www.ccc-usa.com

Seal-Krete announces new high-performance metallics

Seal-Krete has introduced a new line of metallic pigments for use with Seal-Krete High Performance Epoxy-Shell seamless concrete floor systems.

Seal-Krete High Performance Metallics are available in nine colors: Black Ice, Polished Steel, Brushed Aluminum, Brown Leather, Warm Caramel, Deep Bronze, Pomegranate, Sage Green and Ocean Blue. Colors can be combined and manipulated to create custom finishes.

Seal-Krete Epoxy-Shell metallic finishes are chemical-resistant and easy to apply on interior floors. The epoxy-based coating system combines durability with outstanding adhesion to concrete floors. Applying a topcoat of Seal-Krete Poly-Shell adds excellent UV resistance and maintains gloss in areas that are exposed to direct sunlight.

www.hp.seal-krete.com

More tint packs for sealers, coatings

ChemSystems Inc. has expanded its popular tint pack program under the Helix Color Systems brand name.

Now available in water- and solvent-based formulas, Helix tint packs are designed to quickly and easily color any brand of water-or solvent-based sealer or coating. The tint packs come in preweighed packaging designed to tint 1-gallon, 5-gallon or 55-gallon units. Just pour the tint pack into the sealer, mix with nothing more than a paint mixing stick, and apply the sealer as usual. Helix Tint Packs are available in 42 standard colors, with custom colors also available.

The expanded line of Helix Tint Packs includes semitransparent and semi-opaque formulas. Because of the concentrated color technology utilized in the Helix Tint Packs, both the water- and solvent-based tint versions ship anywhere in the United States at low cost and without hazmat fees. Helix Tint Packs meet VOC regulations in all 50 states.

www.chemsystemsinc.net

PROJECT PROFILE

Fluker Fireplace

Modesto, Calif.

by Liz Schick

Some people think this soaring 18-foot fireplace in a Modesto, Calif., has a leather-like appearance. But to its creator, Mat Rogers, it looks like a lakefront with the moon shimmering on the water as night falls and the tree line recedes from view.

It's pretty, poetic, and just what Gordy and Lynn Fluker dreamed would replace the old, featureless white stone fireplace that was installed when their home was built.

The couple's interior decorator, Jodi Jenson, came to Rogers, owner of Modesto-based Flying Turtle Cast Concrete, after seeing examples of his creative concrete work in the Flying Turtle showcase home (his own). She invited him to bid, design and build a new fireplace for her client.

Jenson suggested some colors she liked, and Rogers ran with it. "I had begun pouring against fabric for some other jobs and she liked the look of the texture," he says. "At the shop we integrated some of that technique and created a design rendering, which I presented with some color swatches to her and the owners."

Photos courtesy of Flying Turtle Cast Concrete

Project at a Glance

Designer: Jodi Jenson, Modesto, Calif.

Client: Lynn & Gordy Fluker, Modesto, Calif.

Decorative Concrete Contractor: Flying Turtle Cast Concrete, Modesto, Calif.

Project Description: Demolition of a stone fireplace and design and construction of a floor-to-ceiling concrete fireplace to act as a design focal point of a great room.

Specs: 18 feet high by 11 feet wide by 1 1/8-inches thick.

Biggest Challenge: Because of the 18-foot height, a scaffold had to be built to allow installation of the two 1-1/8-inch thick concrete side panels, which were 12 feet high by 11 inches wide, including the steel joints. Heavy!

Time to Complete: 7 weeks, including deconstruction.

Crew: 6

Materials Used: Bronze color from Blue Concrete, marble integral color from Davis Colors, 511 Seal & Enhance from Miracle Sealant Co., Black Magic Patina finish from Sculpt Nouveau, Lancelot blade from King Arthur's Tools

At first the clients were reticent about the black, but Rogers explained how he would balance it with warm color and showed a small sample of how he would create a "watery" effect in the black. They approved it and the project went from there.

Rogers explains that there were three concrete techniques employed in designing and constructing this fireplace.

Fabric-forming the side panels

Twelve feet high when stacked and installed, the black panels on either side of the center were poured against fabric. They look somewhat like roughened metal or steel. After pouring and letting the concrete cure for two weeks, Rogers rubbed in Bronze powder from Blue Concrete to achieve a slightly warm, metallic shimmer. This black was completely different from the black of the center panels, Rogers explains.

At the major joints, the team placed cold-rolled steel buffed with steel wool. They wiped Black Magic Patina finish from Sculpt Nouveau onto the steel and waxed it with carnauba wax.

Each panel was poured in three 11-inch by 4-foot pieces. The steel was placed into "rabbits," grooves in the panels, and epoxied into place in the Flying Turtle shop. The steel rails kept the panels perfectly aligned when they were installed on-site.

Molding the center panel

The center panel consists of three blocks, each about 3 feet by 4 feet. "Each incorporates a subtle art technique achieved by carving the mold panel," Rogers explains. "Bits of charcoal and shards of clear glass were set into the pour, so when the casting released, it shimmered, like rippling water." The idea of making this dramatic black statement came after looking at the ceiling, which was very white and busy with lots of sheetrocked beams. Everything else in the room is white or very light.

"Instead of the really ugly white stone fireplace that existed, I wanted to make a powerful focal point which would make the ceiling irrelevant and pull your eye to the fireplace," Rogers says.

On the lowest of the three blocks, the one just above the mantle, where the concrete is brown, Rogers did what he calls "pour lining." To achieve this look he used the Lancelot 4-inch chainsaw attachment (from King Arthur's Tools) on a grinder — "a very, very scary tool," Rogers says. This enabled him to carve and grind a heavy horizontal linear pattern into the mold.

Then the mold was tilted and concrete was poured. "We waited a few moments, poured another segment, and so on. It resulted in the formation of linear striations, so when it came out of the mold it looked like striated concrete, layered one on top of the other. It gives it a more earthlike impression."

Using a variant of this mold method, a very subtle tree line was created along the top, across the uppermost panel. "In addition to carving the panel, when we poured it we set in flecks of charcoal and clear glass, so that when the casting was released it would have these subtle bits of glass embedded in the concrete that would shimmer horizontally," Rogers says.

They got the glass and broken mirror out of a dumpster in the back of a local glass shop, then hit it with a hammer to get the right sizes. Notes Rogers, "I did this on an earlier job when a supplier wanted $1,200 for a box of tempered glass bits. I bought a sliding glass patio door, hit it with a hammer and presto — plenty of tempered glass!

Pour-lining the surround

As counterpoint to the dramatic darkness above, the mantle, surrounds, arch below the mantle, and hearth are all colored with a marble-toned integral color from Davis Colors and given a satin finish.

In order to show off the moonlight shimmer on the length of the piece, the lighting had to be perfect, which proved to be a challenge.

Light shining upwards hits the little flecks of glass and mirror and encourages the feeling of looking at water. However, Rogers realized that anyone sitting on a couch would see the glare of the bulb under the mantle. "We were able to recess the bulb far enough into the underside of the mantel so as to hide most of the bulb and eliminate the glare."

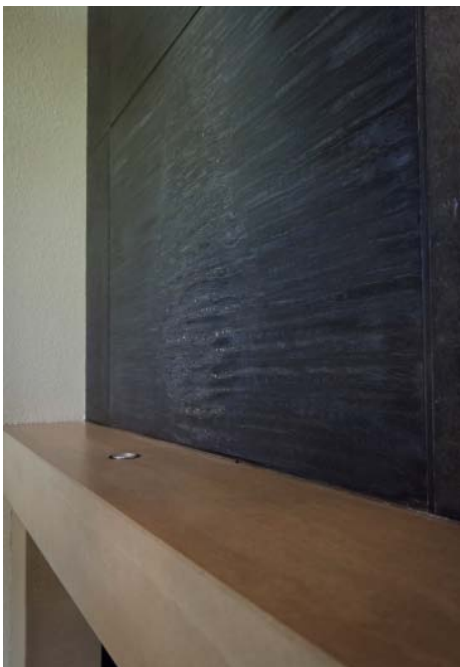
To finish the job, Flying Turtle used an enhancing penetrating sealer — Miracle Sealant Co.'s 511 Seal & Enhance — on all the concrete. "We don't normally put a coating onto fireplaces, since nobody is going to eat off it," Rogers says. "The penetrating sealer gives it a more natural look and seals perfectly well for its use."

Did the somewhat reluctant clients like the finished project? Lynn Fluker wrote to Rogers: "We not only have a spectacular fireplace but we have a piece of ART. We put the whole design into Mat Rogers' hands and had no idea of what he was going to do. … To this day we see more and more hidden concepts in the design. Thank you, Mat."

Since finishing this project slightly more than a year ago, Flying Turtle has also created a bar in the same room for the Fluker's.

And on a more Hollywood note, they're about to begin a kitchen and powder room for actor Robert Redford after designing kitchen countertops and a fireplace for him a few years ago.

www.flyingturtlecastconcrete.com



SUCCESS WITH CONCRETE COUNTERTOPS

Countertop Casting in the Summer Heat

by Jeffrey Girard

Summertime brings challenges to almost everyone in the concrete industry. Heat and humidity can turn an ordinary job into a frantic scramble of chaos, frazzled nerves and possible mistakes. Knowing what to expect and how to deal with the weather can prevent costly problems, errors, and expensive redos.

Hot summer days severely decrease the working times of setting concrete and increase surface drying. Heat accelerates curing, so early strengths are boosted, but moist curing must be more carefully monitored in the summer to prevent curling and too much drying. And high humidity, cool mornings and hot afternoons make sealing an exercise fraught with anxiety.

In summer 2011, I spent time in the Cayman Islands working on a variety of projects. The first one was a large outdoor cast-in-place bar top that needed about 2 cubic yards of concrete. I worked with the local batch plant to customize the mix, not only to tailor it for appearance but also to extend the working time.

While a conventional concrete truck mixed and delivered the concrete, it had to be wheelbarrowed to the work site and hand-placed by the bucketful. Summer daytime temperatures routinely hover around 88 F (31 C), and with the lengthy amount of time it takes to dispense, move, place, compact and strike off concrete, I knew that I would need more help to extend the working time.

Photos courtesy of The Concrete Countertop Institute

Jeff Girard (in the dark blue shirt) helps a crew place and screed concrete for a bar top in the Cayman Islands.

Heat and working time

Heat accelerates chemical reactions, speeding up the hardening rate and shortening the time we have to work with the concrete. As a general rule of thumb, an increase of 20 F (11 C) reduces the working time by about 50 percent. So when the temperature is 90 F (32 C), setting time is about half as long as when it's 70 F (21 C).

There are two effective ways to extend the working time of your concrete. One way is to use a set-retarding admixture. I used this approach for the cast-in-place project. Another way is to chill the concrete by using ice as part of the mix water. This is a method I use when casting in my shop. And both methods can be combined to greatly extend the working time, which is what I do when I cast using rapid-hardening cement in my concrete.

Set-retarding admixtures

Type B set-retarding admixtures conforming to ASTM C494 are a safe, effective way to gain more working time, usually adding an hour or two depending on the mix, the retarder and the temperature. The retarder the plant added gave me a full two hours to work with the concrete. I had specified a 4-inch slump, and the concrete maintained this throughout the pour, even up to the last bucketful.

The advantage of a set-retarding admixture is that it can be added to a mix without affecting the mix's other ingredients. One disadvantage is that the effectiveness of retarders is dependent on temperature, so higher temperatures require higher doses. This can increase the cost of the mix as well as potentially affect early strength gains.

Putting ice in it

As I mentioned, using ice to cool concrete is also an effective method to increase working time, since ice is a potent chiller. The chemical reactions occurring in fresh

concrete slow down considerably at cold temperatures. This is why concrete can take much longer to set in the winter. In fact, the set time can be twice as long at 50 F (10 C) as it is at 70 F (21 C) and four times longer than it is at 90 F (32 C).

What makes ice so potent is that it takes a lot of heat energy to melt it. One pound of ice needs 144 BTUs of heat energy to melt. What is left is one pound of cold water at 32 F, freezing temperature. It then takes only 30 BTUs to warm that cold water to 62 F (17 C). Ice is a much more effective chilling agent than cold water, and it is more practical to use ice than to try to refrigerate all of the mix ingredients.

It is only when the concrete starts to warm up that the working time begins to shorten. With a bit of planning, this happens after all placing and finishing is completed.

While admixtures do not affect mix proportions and can even be added at the last minute, using ice requires preparation and forethought. Ice is an integral part of the mix design, accounting for part of the mix water. You MUST NOT simply add some ice to the mix. It is not possible to add ice to an existing batch of concrete without grossly affecting the water-to-cement ratio.

Estimating the right amount of ice to substitute for water and achieve a target mix temperature requires a bit of math, knowledge of the mix design and information about ingredient temperatures. There is no rule of thumb for using ice to cool concrete. The Portland Cement Association's "Design and Control of Concrete Mixtures" explains the calculations, and my company, The Concrete Countertop Institute, sells an ice calculator with our mix calculators.

The importance of a moist cure

Once the concrete heats back up to the ambient temperature, it begins to gain strength at an accelerated rate. Good curing practices are essential at any time, of course, but especially during summertime.

Concrete needs moisture to cure, and high temperatures increase drying rates, so a moist cure (keeping concrete wet so it can gain strength) is essential. In some areas, summer heat brings high humidity, which is actually good for concrete. In other areas, summer is scorching hot and bone-dry, and keeping the concrete moist while curing is a challenge. This is the case in Phoenix, Ariz., for example. Summer can also bring beating sun and wind. This was the case in Grand Cayman, and my home state of North Carolina is even worse.

Wet-curing concrete is the key to preventing shrinkage cracks, curling, lower-than-expected strengths and a host of other problems. Exterior concrete exposed to the sun and wind should be covered with a curing blanket, wet burlap or a curing compound to help hold in moisture and prevent drying. Interior concrete should also be covered and monitored for moisture. Simply lifting up the covers and spritzing the concrete with water once or twice per day can make the difference between weak, dried-out concrete and strong, properly cured concrete.

Windbreaks should be set up to keep hot, dry air from blowing across the concrete. Wind greatly accelerates evaporation and is a prime cause of plastic shrinkage cracking in freshly poured slabs.

Interior concrete is often sheltered from the wind and sun, but good curing practices are still important with indoor pieces.

Sealing and humidity

When it comes to sealing concrete, temperature and humidity can play a significant role in achieving success or failure. Many concrete sealers (coatings especially) prefer or require dry concrete. Moisture in the concrete can compromise the bond with the concrete or even prevent the sealer from curing properly. Different sealers tolerate moisture differently, so it is important to consult the sealer manufacturer's instructions.

Balancing sufficient moist curing with adequate drying takes care, practice and

experience. Problems commonly arise when the process is rushed. Ideally concrete is wet-cured for as long as possible and allowed to dry only once the concrete reaches adequate strength. Drying would then occur slowly and evenly, permitting the slab to lose moisture without curling, shrinkage or cracking. Only after the concrete's moisture levels reached acceptable levels of dryness would you seal.

It is a common notion that concrete "breathes." What this means is that as cool concrete warms up, the air and water vapor in the concrete expands, leading to the concrete "exhaling." Likewise, air and water vapor contract as the concrete cools and "inhales." Sealers applied to cool concrete can bubble or blister when the concrete warms up before the sealer fully cures. The best time to apply a sealer is when the concrete will remain at a stable temperature for a long time or when it is beginning to cool down.

Even after proper curing and drying, hot temperatures and high humidity levels are factors to consider during the process of sealing. Just like concrete, two-part (catalyzed) finishes react faster in warmer temperatures, drastically reducing the sealer's pot life. Applying sealer to hot concrete doesn't just lead to bubbling or blistering due to "breathing" — it can also result in uneven finishes. Heat causes the liquid carrier (solvent or water) to evaporate faster than the fresh sealer can flow out into a smooth film.

Jeff Girard mixes sealer to coat the finished cast-in-place bar top.

For the Cayman Island bar top, I used a two-part sealer (StoneLok 2K, from Richard James Specialty Chemicals Corp.) that has a fairly short pot life at elevated temperatures. To ensure the sealer remained workable and that the finish looked good when I was done, I chilled the components in a refrigerator overnight. While on-site, I stored the cooled sealer in an insulated cooler so that even after mixing, the sealer's pot life was extended. This gave me time to apply the sealer carefully without rushing and without worrying about the sealer getting thick. It is very important that the sealer have the same consistency at the beginning and at the end of the sealing process. Otherwise, the texture and sheen won't be the same.

Summertime heat is a fact of life many of us have to face. Knowing how to deal with its effects can make our jobs easier and more relaxed — and it can also increase quality and save money.

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

PRODUCT NEWS

Water-reducer for green concrete

The North American Admixture Systems business of BASF's Construction Chemicals division has announced the introduction of Pozzolith 700N, an innovative Type A water-reducing admixture for sustainable ready-mixed concrete construction. Pozzolith 700N admixture has been specially formulated for use with supplementary cementitious materials in ready-mixed concrete.

The use of supplementary cementitious materials in concrete mixtures typically results in extended setting time. Pozzolith 700N admixture provides faster setting time in these mixtures.

www.basf-admixtures.com

Pebblestone aggregate from ASG

American Specialty Glass is now offering a full line of Pebblestones.

The line consists of: Mint, Polished Cucumber, Polished Ebony, Polished Ivory, Polished Rustic Red, Polished Tigers Eye and Winter Frost. They are available in a 1/2-inch to 1-inch size range as well as 1-inch to 2-inch. Mint and Polished Rustic Red are only available in the smaller size.

www.americanspecialtyglass.com

ASTM addresses fines in aggregate

Research and field experience have shown that fines free of clay and other harmful materials can be nondetrimental and even beneficial for concrete properties. A proposed new ASTM International standard will be used to distinguish between harmful and nonharmful fines in construction aggregate.

ASTM WK36804, Test Method for Rapid Determination of the Methylene Blue Value for Fine Aggregate and Mineral Filler, is being developed by Subcommittee C09.20 on Normal Weight Aggregates, part of ASTM International Committee C09 on Concrete and Concrete Aggregates.

Eric Koehler, research and development director at W.R. Grace and Co., says that once approved, ASTM WK36804 will be used to qualify new material sources and for production quality control by producers of aggregate, ready-mix concrete and asphalt concrete.

"The methylene blue test has been shown to be an effective indicator of the amount and type of clay present in aggregate and can therefore help to distinguish between harmful and beneficial fines," says Koehler, a C09.20 member, in an ASTM news release.

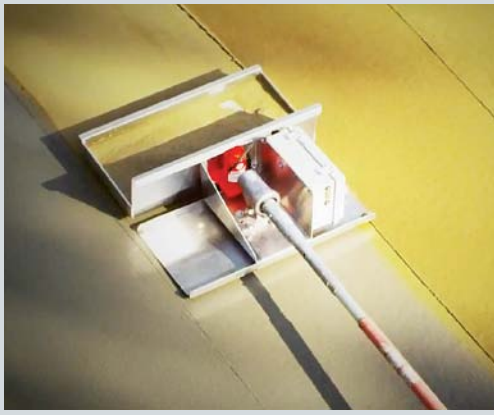
Koehler says that the methylene blue test method contained in ASTM WK36804 does not involve the titration and visual assessments typically associated with such testing and can be performed in the field in about 10 minutes.

"Once it has been approved, the proposed standard will enable the use of a wider range of sands and limestone fillers in concrete, while also ensuring that these aggregates are of high quality," says Koehler. "This will prevent the waste of nondetrimental fines, which must currently be washed out of sand indiscriminately. This will result in more sustainable use of limited aggregate resources."

ASTM International welcomes participation in the development of its standards.

www.astm.org

Color Spreader for color hardeners



Triple Hard Tools has developed the Color Spreader, a new way to apply shake-on colorants and color hardeners.

Thanks to the Color Spreader, contractors no longer have to throw the material by hand, which can be wasteful and result in hazardous airborne silicates. Now they can simply load the powder into the Color Spreader tray, hit a remote-control start button to begin distribution, and float the tool across the concrete. As the tool floats across, a built-in vibrator helps to distribute the product onto the concrete in an even manner.

The Color Spreader is constructed of 100 percent aluminum and is available in a 24-inch wide model and a 48-inch wide model.

www.colorspreader.com

Control Finish
by Fritz-Pak Corp.

Exterior decorative concrete projects lend themselves well to areas of the country with warm, dry climates where the client can enjoy their outdoor space year-round. Unfortunately warm temperatures can also impact the workability of concrete by evaporating the water on the surface prematurely. To help combat this problem, Fritz-Pak Corp. developed Control Finish, a finishing aid that brings water back to the surface.

"A lot of finishes call for the use of a dry-shake color hardener," says Gabriel Ojeda, president of Fritz-Pak. "Most are made with cement, color, sand, et cetera. When you use a material that requires water to work and react, and not much water is left on the surface, where is it going to come from? Adding water to concrete when finishing is a big no-no. A product like Control Finish will release some of the water to the surface."

Jason Geiser, a decorative concrete contractor and supply store owner in Orrville, Ohio, has been using the product for nearly a decade.

"We use it on almost every job we do in the summer," he says. "It's something that's always on the truck. We have a separate sprayer just for that."

While Geiser uses it regularly for aiding in color hardener application, it's also proved beneficial on stamping jobs, he says.

"If that top quarter-inch of concrete is drying too fast and it feels like it's ready to stamp, if it's too soft underneath you'll get shrinkage. Control Finish eliminates that. By the time the top dries (when using Control Finish) everything else can catch up so it can support your weight," he says.

Available in powder form, Control Finish simply needs to be mixed with water and sprayed on. Ojeda was quick to point that the amount of water applied to the concrete in this instance is much less than the amount of straight water you'd need to sprinkle on to help workability.

Ojeda claims that the application process is essentially "foolproof." Contractors should note that using Control Finish will not retard the set of concrete as long as it is not applied too liberally. It's also critical to cover the entire surface to avoid color issues. The product itself doesn't cause variance, but different amounts of surface water might.

"If you use our material and only apply it to half the surface, you may end up with a difference in texture and color," Ojeda says.

www.fritzpak.com

Photo by Southern Arkansas University Photo Team

A student in Jason Geiser's "High-End Stamped Concrete and Custom Features" workshop at the 2012 Concrete Decor Show works on a decorative border. Geiser used Control Finish on this concrete to help offset the dry Texas air.

Contractors Strike Gold Polishing Driveways

by Stacey Enesey Klemenc

Polishing contractors take note: There may be a future in grinding and sealing concrete driveways.

Just ask Chris Paisley, president of Concrete Contracting Solutions Inc., in Columbus, Ohio, or Randy Klassen, owner of Klassen Concrete, in Winnipeg, Manitoba. Both men contend it's a great source of revenue for polishing contractors, as well as a good way to help pay for the often hefty investment in grinders.

Paisley began working with concrete on a construction level in 2001 and started polishing in 2008. In 2010, he exited construction completely to solely focus on grinding and polishing. Klassen, who's been working with decorative concrete since 1990, added polishing to his repertoire last winter. Just this summer, he began grinding surfaces outdoors with his new equipment, a Diamatic BMG-780PRO and a BMG-735PRO. By the end of June, Klassen had already completed 15 to 20 jobs.

Both men say they don't know anyone else in their service areas who offers grinding and sealing as an outdoor finish option. "I would love to see more awareness and an industry acceptance of the process," says Paisley, who uses HTC 800 and 500 grinding machines.

Photos courtesy of Klassen Concrete

Randy Klassen, Winnipeg, Manitoba, grinds outdoors with equipment he bought for polishing inside. This is a driveway he ground and acid-stained.

When it comes to outdoor residential surfaces, Klassen Concrete doesn't just grind and polish driveways. Here the company works on a patio.

A not-so-crazy idea

Back in 2009, Paisley contemplated grinding and sealing 30,000 square feet of sidewalk around a shopping center in Naples, Fla., as a solution to the surface's flaking problems. But after he couldn't find any relevant projects or useful information on the topic, he withdrew his proposal.

"I got a little nervous," he says. "I was apprehensive about whether the surface would be too slippery."

The concept intrigued him, however, and he continued to search for more information. He thought grinding and sealing could be a good solution to Ohio's exterior concrete scaling problem, which is common in northern areas that experience a lot of snow and ice.

So in summer 2009, he decided to experiment. He ground the delaminating surface off two driveways in Columbus and applied a sealer. "When sealed, the driveways looked like polished floors. The finish was smooth and uniform," Paisley says. Even better, the new

surface met the safety standard for walkway surfaces. It was deemed safe, wet or dry.

"Still, I wasn't totally comfortable with the procedure," he says, and his gut feeling proved to be true. That next spring, he got a phone call. Both driveways were failing again.

"We didn't grind deep enough," Paisley says. "We thought we fixed the problem, but there was still slight deterioration in some areas of the driveways where the failing surface had not been removed to the full depth." While they had ground 1/4 inch off the surfaces in places and removed the scaling, he says they needed to grind 1/4 inch off the whole plane or the scaling would continue.

Over the course of the last three years, Paisley says, they've learned how to minimize problems associated with slight deteriorations in surfaces they've ground. For starters, they've generally moved away from smooth, uniform finishes, because if any deterioration takes place, it really stands out.

For skid resistance, "we run a scarifier or shotblaster to create a more aggressive profile simulating exposed aggregate concrete," he explains. "This (process) breaks the cement paste around some of the rocks and roughens the tops to create a rough texture." With the surface roughed up like this, slight deterioration is completely unnoticeable, he says.

This finish — which Paisley calls mechanically exposed aggregate concrete — works particularly well for surfaces such as driveways that are subject to snow or mud. "Ice and snow can settle into the lows and you'll still get traction from the highs. It's more like an asphalt surface."

Lasting results

When driveways are older and in need of repair from scaling, Klassen says, grind-and-seal is a superior method to achieve a "cool worn look" similar to sandblasting. "On existing houses and developed areas, sandblasting is a nightmare and impossible. On new construction, it's easier but it's a huge mess and destroys plants and landscapes," he says.

"By grinding, we can totally control airborne material and our waste, as well as the amount of exposure — from a light sand exposure to a full stone-terrazzo appearance.

"We grind wet and use special vacuums, which works fantastic. Before we started using the walk-behind vacuums, it was a bit of a chore to clean up."

In addition to existing driveways, Klassen says pool decks and new driveways are excellent candidates for grinding and sealing. On new projects, "we're pouring with colored concrete and often use specialized aggs, such as black or red granite and limestone." He reports his company is also using acid stains and penetrating dyes on grind-and-seal jobs with successful results.

"Basically any surface can be ground as long as there's not a lot of structural movement or slab separation," he says.

As far as being profitable, Klassen says he can't complain. "We can charge really good rates for doing this and are probably making a better (profit) margin on this kind of work than anything else right now. And it's easy. You're only going through one step instead of nine."

Klassen says his biggest reluctance to

Photos by Chris Paisley

Chris Paisley ground and scarified this driveway in Louisville, Ky., to give the surface a more aggressive profile, then sealed it.

getting into polishing was that he thought he wasn't going to be as mobile as he wanted. "But by having all my equipment and a portable generator in one trailer, it allows me to go and grind anywhere," he says.

Ultimately, grinding and sealing is another really good option to offer your customers. "It's all about being different and creative," Klassen says. And it's a great solution for earth-conscious people who prefer to use sustainable products. "This process takes existing concrete, revitalizes it and easily gives it another 10 years of life, maybe more."

Paisley agrees. "This method is about 40 percent to 60 percent of the cost of replacement," he says. "And it creates a really neat decorative surface at the same time."

www.concretecontractingsolutions.com

www.klassenconcrete.com

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How Concrete Hardness Affects Diamond Life

by Jennifer A. Faller

How long is a set of diamonds supposed to last? Or more to the point, what kind of square footage can I expect out of a set of diamonds?

First, let's start with one important point — the operator must perfectly match the diamond bond to the hardness of the concrete. A perfect match will produce a complete scratch pattern on the concrete without eating through your diamonds and profit margin.

Ignoring this primal rule is asking for trouble. Inevitably, if the diamond bond is softer than the hardness of the concrete, the diamonds will wear out quickly. If the diamond bond is harder than the concrete, the diamonds will resist cutting into the concrete, essentially producing little wear and a negligible and uneven scratch pattern.

The hardness of concrete also impacts diamonds' production and effectiveness because of the kind of dust that is produced during the cutting process. Hard concrete tends to produce ultrafine talcum powder dust. This dust is very nonabrasive — it does not wear the bond of the diamond segment sufficiently. As a result, the diamond grit barely becomes exposed, so it grinds even finer powdery dust. Soon, the segment ceases to grind and the segments may even get hot and glaze over. The term "glazing over" simply refers to the metal matrix or bond not eroding and exposing new diamonds. When this starts to occur, a softer-bond diamond should be used to avoid this situation.

The opposite is true regarding soft concrete. It produces very soft, gritty, sandy dust that is aggressive against the bond, eroding it and constantly exposing diamonds, and in this case a harder-bond diamond should be chosen.

Luckily most diamond manufacturers have caught on and now make several metal bonds for each grit.

Gauging hardness on the job

So how does one attempt to answer the diamond life question in the field? The first step is to begin with a quick analysis of the concrete slab. One method is scratching it using a Mohs test kit to get a feel for which diamond bond should be used to start the job. The first few minutes of grinding with the initially selected diamond bond will help determine the validity of the test results. Once grinding begins, too much dust after a few passes and the bond is too soft. Hardly any dust, and the bond is too hard.

The grinding sweet spot is when the grinder is producing a fair amount of dust as it passes and cuts the concrete, the concrete that is revealed is uniform and lighter in color, and the operator is able to move forward at a steady pace.

A crucial note for all business owners about grinding in the sweet spot with the correct bond — that's the point where you have hit the peak of the Diamond Cost vs. Labor Cost graph, both financially and by time spent grinding.

The makings of a quality diamond

Now, the rocket science part of the question! Not all diamond manufacturing is equal. The technology for developing a bond is complex, with many minerals and elements (such as cobalt, copper and nickel, to name a few) mixed and matched in specific ratios that must be precisely followed as the diamond bond is produced.

In addition, the type, quality, size, concentration and structure of the diamond itself is a factor. The diamond is either a natural diamond geologically mined or a synthetic diamond created in an artificial process.

The quality of diamonds is factored into the bond as it is directly linked to the application that it is intended for. For example, a manufacturer may choose to

use a lower-quality diamond in a softer bond to release new unused diamonds at a constant rate. The lower-quality diamonds will splinter and create new cutting edges more easily than a higher-quality diamond.

Manufacturers must maintain strict control of diamond mesh size, more commonly known as grit size, and in addition, they must ensure that the concentration of that mesh is consistent throughout the bond. The structure or shape of the diamond is important, since diamonds can have many sides and a multitude of edges, which cut into the substrate.

The ratio of specific diamonds within a grit segment as well as the ratio of natural to synthetic diamond grit will also determine its effectiveness. For example, when manufacturing a premium 30/40 grit segment, the manufacturer determines the concentration of diamonds and the ratios between 30 grit, 40 grit and the small amount of either a lower or higher grit of diamonds thrown into the mix.

Now, add the manner in which the bond is manufactured, whether it is hot- or cold-sintered and at what temperature and for how long, and you soon begin to realize how it is that each manufacturer approaches the manufacturing of diamonds differently. (Note: Sintering is the process of pressing or compacting the powdered materials — the diamond bond — into a desired shape and then heating the compressed material to bond the material and essentially create a solid — the metal bond segment.)

Let's now look at size. A larger segment will last longer and therefore cover more square footage than a smaller segment, given that all other things are equal. When referring to size, we use the length, width and height or other measurements to help determine volume. For example, a standard rectangular segment that is 40 millimeters long by 10 millimeters wide and 10 millimeters in height has a volume of material that equals 4,000 cubic millimeters. Now let's take a segment that is round with the dimensions of 24 millimeters in diameter and 13 millimeters in height. This segment is about 5,880 cubic millimeters in volume and is therefore 47 percent larger than the rectangular segment. So if all things are equal, the round segment will provide 47 percent more square feet of production than the rectangular segment.

Other factors

An external factor to consider when evaluating diamond life and effectiveness is the condition of the diamond grinder. A grinder that is in good condition will not abuse the diamonds as they are used. Equipment not maintained or worn or broken parts not replaced will cause diamonds to wear unevenly or excessively.

In addition, operator experience is vital to maximizing tool life, as one must be experienced in "reading" the diamonds as they grind and cut the concrete.

As you begin to understand and appreciate the complexity behind the research, development and manufacturing of diamond segments, you become able to ask the right questions in order to arrive at the answers that will give you the most bang for your diamond buck.

I would like to thank Ron Yagur of Dynamic Diamond Tooling for his technical expertise and contribution to this article.

Jennifer A. Faller has been in the surface preparation industry for the past 15 years as a decorative concrete contractor, technical consultant and owner of a distribution company. Currently, she is business development manager for Vexcon Chemicals and lead trainer for the Certi-Shine brand of polished concrete materials. Contact her at jfaller@vexcon.com.

An Arizona High School Teaches Concrete Skills

by Chris Mayo

A high school teaching students the finer points of polishing?

Compass High School, a charter school in Tucson, Ariz., does just that. The school has added pouring, finishing and polishing concrete to its vocational programming.

Bryon "Bru" Bruington, technical sales director for Kut-Rite Manufacturing Co., based in Michigan, heard about Compass High School from a colleague. "I was instructing for our polishing school in Tulsa, Okla., and a high school from Tucson had sent some teachers to learn from us. Sending teachers to a concrete school piqued my interest," recalls Bruington. "It turns out that they had purchased one of our Conquer 25 grinder/polisher machines and that they were planning on having their students operate the machines."

Bruington wanted to know more, so he called the school.

"They weren't just doing some little projects," says Bruington. "They were remodeling nearly all of their existing building, and they have plans to significantly expand their campus — thousands of square feet of concrete to polish."

Kerk Ferguson is a teacher and the assistant principal at Compass. "We've always looked for opportunities to enhance our curriculum," he says. "In 2001, when we started the school, we focused on the fine and performance arts. But it wasn't long before we expanded to all kinds of disciplines. We recognized that learning can happen in a number of settings and we had to learn to seize opportunities when they were presented to us. I think it was probably our welding and construction teacher who started thinking about adding decorative concrete work to our programming."

"We started last year with pouring some slabs where we had torn up some asphalt," says Robert McDougald, the welding and construction instructor. "It was a slow process at first, but this year was better, and next year should be even better. The more kids who learn the processes of pouring, finishing and polishing concrete, the more ad-hoc teachers we have to teach the new students."

So far, the concrete students have polished about 6,000 square feet inside the main school building. They have also poured and polished concrete outdoors, which is where McDougald prefers to start new students.

"We use our outdoor areas to practice and teach," he says. "We try to let the new students observe and work with the more experienced students at first. As they absorb the process, we give them more responsibility."

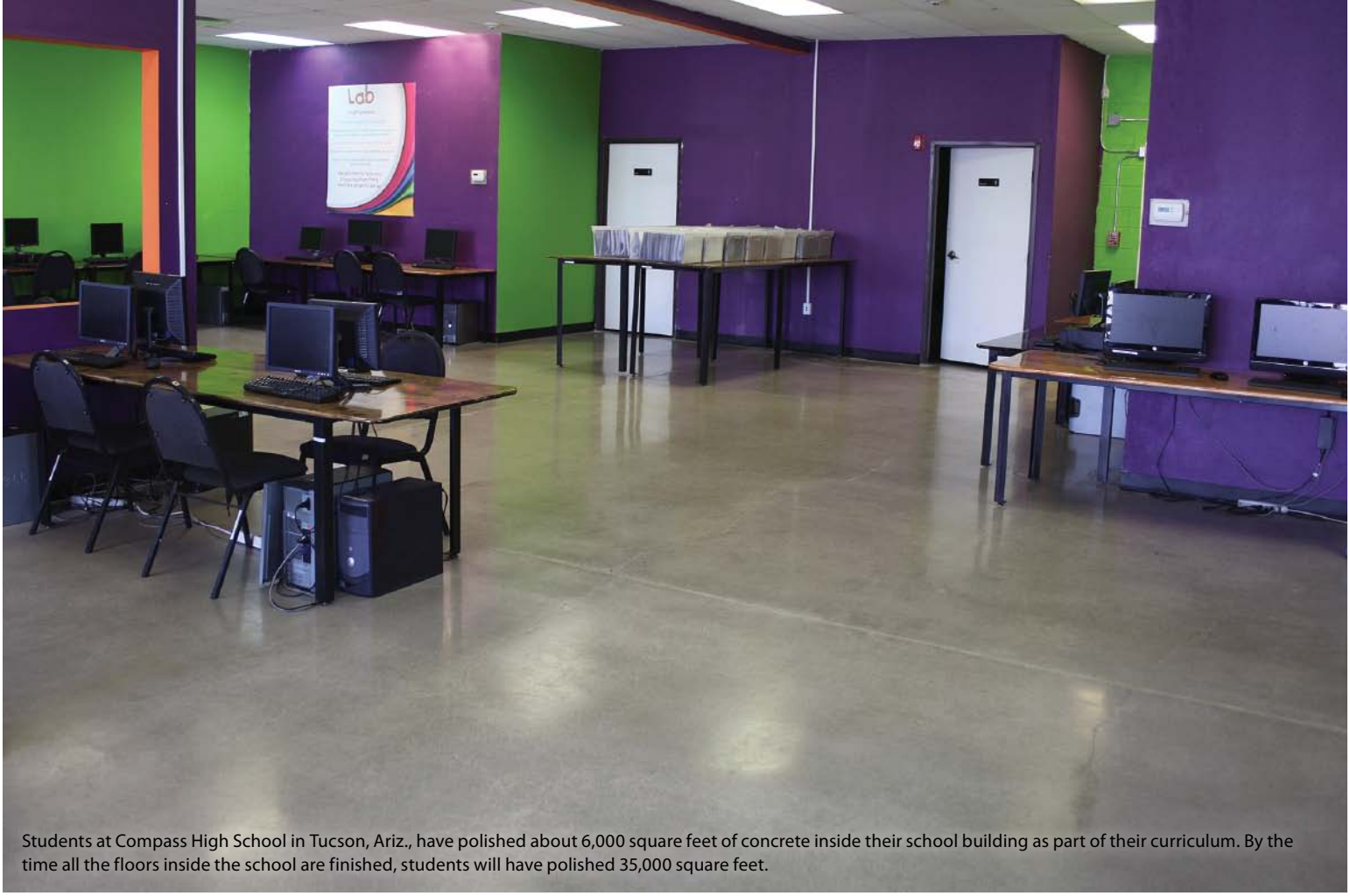
McDougald also points out that the small class size gives him an advantage over some teachers in more traditional schools. He believes that the one-on-one time he is afforded as a result of smaller classes allows him to bring students up to speed much faster.

Photos courtesy of Kerk Ferguson

An obvious question: Is this truly a teaching opportunity for the school, or is it a way to garner cheap labor for a remodel?

"We do save money by teaching students concrete work," says Ferguson. "But I'm not sure we're saving as much as one might assume. We still have to pay for the concrete, we have to buy the equipment, and the results don't come nearly as quickly as they would if we were to hire outside contractors. I'm convinced the students benefit most — they learn a valuable and marketable skill, and when they participate in improving their own school you can see how proud they are of their work and their school."

Ferguson estimates that by the time all the floors inside the school are complete,



Students at Compass High School in Tucson, Ariz., have polished about 6,000 square feet of concrete inside their school building as part of their curriculum. By the time all the floors inside the school are finished, students will have polished 35,000 square feet.

students will have polished 35,000 square feet of concrete.

"Think about it," says Ferguson. "We'll probably have about 300 kids work on this as part of their curriculum. Those that find they like the vocation can leave our school ready to work in the concrete industry. In fact, there are already a few students who have graduated and are doing just that."

www.compasshsgators.org

PROJECT PROFILE

Nightclub at Wild Horse Pass Casino

Chandler, Ariz.

by Liz Schick

You can bet your boots that it wasn't easy to overlay the three glittering, aggregate-spiked ramps that lead down from the VIP lounge to the dance floor in the nightclub of the Wild Horse Pass Casino in Chandler, Ariz. As Shawn Halverson, president of Surfacing Solutions Inc. and a master of understatement, says, "You could say that pouring concrete on a slant is a challenge. But fun."

Temecula, Calif.-based Surfacing Solutions was invited to a meeting with the leaders of the casino construction project by another decorative concrete contractor, Jay Peterson, of The Art of Concrete, Oceanside, Calif. They wanted to see if Halverson's outfit could design and install glittering floors for the nightclub that would enhance the lighting and color ideas the architect had in mind. The crew would have six weeks to finish before opening night.

By the time gamblers began placing their first bets at the new casino, Halverson's crew of eight had completed about 3,500 square feet of floors and ramps, indoors and out, on schedule.

Halverson and Jay Peterson tested the design ideas and component materials in the Surfacing Solutions yard. Once he and the project's architect (Kris McCain, from LPA San Diego) were satisfied with the look and performance, it was time to double down and bet they would finish on time.

Photos courtesy of Surfacing Solutions Inc.

The job consisted of two levels. The upper included an exterior curved balcony and VIP lounge floor with a base of plywood more than 1 inch thick, which sloped down in three places to the dance floor, all on an already-existing structural concrete slab. Each circular ramp was between 15 and 35 feet long.

As he started on the VIP level, Halverson worried that the plywood floor would crack and shift when they began the concrete overlay pour. It didn't.

Mapei's Ultraplan M20 Plus self-leveling concrete was used throughout because the self-leveling material could easily be mixed with aggregate and glass. Halverson credits Jay Peterson for his help in designing the proper quantity of materials to make this work, and the glass, rock and mirror was obtained from United Terrazzo Supply of Ontario, Calif.

Halverson maintains that it is important to use the same amount and weight of glass, rock and mirror aggregate as cement when mixing the concrete. "It's the best combination we've found to this point," he says.

Since the motif was undulating lines, curved furnishings, glittering lights and mirror balls, the architect's design included flowing lines of concrete integrally laced with the glass, mirror and rock for reflected

Project at a Glance

Client: Wild Horse Pass Hotel and Casino, Chandler, Ariz.

Decorative Concrete Contractor: Surfacing Solutions Inc., Temecula, Calif.

Project Parameters: Pour glittering, polished aggregate-filled ramps, a VIP area floor and an exterior balcony within a tight time frame.

General Contractor: Kitchell, Phoenix, Ariz.

Builder: Southwest Architectural Builders, Phoenix

Architect: Kris McCain, LPA San Diego

Time to Complete: 6 weeks

Crew: 8

Materials Used: Mapei Ultraplan M20 Plus self-leveling concrete; Westcoat Specialty Coating Systems' water-based stains, MACoat reinforced deck system, epoxy, Texture-Crete overlay and EC-75 Polyurethane Sealer; aggregate and terrazzo strips from United Terrazzo Supply

Grinders: Diamatic 780PRO polisher, Metabo PE-12175 7-inch Angle Grinder

sparkle. Westcoat Specialty Coating Systems water-based concrete stains in Bronze, Cream and Espresso were used to set off the borders, separated by terrazzo strips set at 3/8 inch tall. Then the entire floor was ground down to the finish height of 1/4 inch for a smooth, polished concrete look.

"Since we customize most of our applications, we use Westcoat products often, and on this job we used the MACoat fiber-lath reinforced deck system over the plywood and added epoxy as a primer for the concrete substructure areas," Halverson says. Mapei was used over the concrete substructure on the lower section.

For all the areas without glass or rock, they installed a Texture-Crete smooth-troweled micro-overlay, then stained the undulating border using Westcoat's Espresso color.

Pouring overlays onto ramps

The biggest challenge was pouring the three circular ramps without having the self-leveling concrete drift away before setting. The first thing Halverson did was to staple expanded metal lath to the plywood, which gave the Mapei Ultraplan M20 Plus self-leveling concrete something to bite into when it was poured. "We had already tested it our shop with a variety of aggregates and glass, as well as on sloped surfaces, and we knew it would work."

The aggregate and glass were blended into the Mapei mix during the mixing process. A consistent look was maintained by adding a specific, predetermined amount of aggregate per bag. Then when the overlay was placed on the floor, there were no issues with aggregate missing in any one spot.

Because the amount of aggregate kept the mix from flowing like normal self-leveling overlays, workers smoothed it out by screeding it off and floating it like concrete. On the ramp slopes, the aggregate helped to stiffen the concrete and kept it from flowing downhill. "It allowed us to keep it up and trowel it down without much of it slumping. Then, after hardening, it ended up being easier to grind and expose the rock and glass," Halverson says.

Since the self-leveling overlay set up quickly, it could have actually been walked on in a couple of hours, but they didn't. Going on to the next ramp allowed them to give each one time to cure, usually 24 hours, before starting the grinding process.

Grinding on the ramps was another adventure. Because of the slope, the larger

polishers were too heavy to use, so the grinding had to be done by hand with a Metabo 7-inch angle polisher. It took three days to go over each ramp using increasingly fine grinding discs. All the remaining areas were ground and polished with Diamatic's 780PRO grinders. Finally, all floors and ramps were finished with Westcoat's EC-75 Polyurethane Sealer.

Halverson and his crew worked overtime to finish on time. He took pains to train the casino staff how to maintain the floors. After they had a change of personnel, he went back and did it again. "They haven't called to yell at me so I guess it's OK," Halverson says. "I can only hope they're doing what they should. We worked hard to make something pretty. I would hate it if it wasn't maintained properly.

"We hit the jackpot doing this project. It was creative, challenging, fun and even turned out to make some money, which we managed not to bet at the casino's tables."

www.surfacingsolutionsinc.com

TROWEL & ERROR

Why Tapes, Stains and Sealers Don't Get Along

by Chris Sullivan

A few months back I was approached by a large manufacturer of tapes and adhesives for the construction industry. They were very interested in learning about the types of adhesives and tapes being used by decorative concrete applicators as well as the common problems applicators had when using these products on typical decorative jobs. I did not have to think very long or hard to put together a list of suggestions and common problems. Like a lot of ancillary products used by decorative installers, the tapes and adhesives used in the industry typically come from other markets and are nothing more than the best option available at that time. Sometimes these crossover products do the job, and other times they fall short and cause problems.

It is widely known that the decorative concrete industry has struggled with tape issues for decades. These range from the tape tearing when overlays are being applied, or stain bleeding under the tape, to adhesive effectiveness when the tape gets wet.

Photos courtesy of Chris Sullivan

An example of blue painter's tape pulling up and damaging acrylic sealer and acid stain.

But by far the biggest problem with tape in the decorative industry is the issue of chemical weld between tape and sealers causing sealer failure when the tape is pulled. Interestingly enough, it is not widely discussed and even less understood. I was one of the first to identify this issue as a problem in our industry more than 10 years ago, and I still include the topic in most all of my troubleshooting presentations today.

There is nothing worse than completing a beautiful stain or stamped concrete project where everyone is happy and you're paid on time, only to get that dreaded phone call — we have a problem! The painting contractors or homeowner taped protective paper to the decorative floor two weeks after you completed the job, and when they pulled the tape up the next day, it took all the sealer and stain with it, leaving a long ugly narrow strip everywhere tape had been applied. This is a big problem, and to make it worse, the owner usually ends up falsely accusing the decorative installer of poorly installing the original work.

The above scenario actually takes place more often than most in our industry realize. The problem occurs with all types of tape, even the blue and green low-adhesive brands, and on all types of sealed floors. I have found that it does occur more often with acrylic sealers and when the sealer is less than one month old.

Blame the tape's resin

The main culprit for this issue lies with the flexibility and type of resin used on most construction tape. When you take a closer look at the glue on the back of tape, you see that it is very flexible. The glue gets its flexibility from plasticizers, additives used to make plastics and rubbers softer and more flexible. For example, high-performance car tires have a lot of plasticizer, which makes them softer, allowing for a better grip on the road.

Those plasticizers allow the glue to flow or "migrate" to form a better bond with the surface they are attached to. Since most decorative sealers have some porosity, the glue migrates into those pores, forming a very strong bond. When the tape is removed, if that bond between the tape and sealer exceeds the strength of the sealer's bond to the concrete, the sealer — and often the stain as well — comes off too. (The term "plasticizer migration" that has been used to describe this phenomenon is not completely accurate, as the plasticizer is not migrating out of the glue, but rather is allowing the glue to migrate into the sealer. I think a better term would be glue migration.)

There's another problem too. The acrylic resin used in the glue on most tape is similar to the acrylic resins found in most decorative sealers and cure-and-seal products. When an acrylic sealer is applied, there is a certain drying window that is required for the sealer to form that hard-wearing surface. The sealer may be dry to the touch one to two days after application, but that does not mean the sealer has completely dried chemically. The process may take weeks depending on temperature,

PRODUCT SHOWCASE

humidity and how thick the sealer was applied.

When tape with acrylic glue is used on a floor with an acrylic sealer that is still chemically drying, the two acrylic resins can form a very strong and permanent chemical bond. I have seen cases where this bond is so strong that when the tape was removed it took not only the sealer and stain, but the top 1/16-inch of the concrete as well. This is why the issue of tape pulling sealers off concrete tends to occur with newer sealed floors. But don't be fooled — the chemical weld between acrylic resins can take place at any time if the right conditions exist. It can also take place between tape and other common decorative sealer resins such as polyurethanes, epoxies, polyaspartics and polyureas.

Another acid-stained, sealed floor damaged by painter's tape.

If you have to repair a floor where tape has removed the sealer and color, the best approach I have found involves using faux finish techniques with tints and stains to touch up the color in the taped areas, followed by resealing. A more invasive approach involves chemically stripping the entire floor, recoloring, then resealing.

The issue of glue migration is not selective to sealed surfaces. I have seen significant damage done when tape was applied to unsealed concrete prior to staining. The same process occurs, but instead of the glue migrating into the sealer, it migrates into the concrete. When the tape is pulled some of the glue remains in the pores of the concrete. The downside is that you can't see it until the concrete is stained, at which time it shows up as a blotchy line on the floor.

This is another good reason to do a water test on the concrete prior to staining — the glue line will show up and give you a chance to deal with it prior to staining the floor. If you need to remove glue from a concrete floor, a solvent wash to liquefy the glue followed by a light scrub and dabbing with a rag works best.

As with anything in nature, time and temperature play a part. As the temperature rises, so the does the speed of reaction. The speed of "glue migration" and "chemical weld" increase as the temperature rises and the longer the two surfaces are in contact.

I promote tape abstinence on any floor that is going to get a decorative finish and especially on any floor that has been sealed. Of course this can change when and if tape products are developed for the decorative concrete industry with these issues in mind.

Chris Sullivan is vice president of sales and marketing with ChemSystems Inc. He has led seminars and product demonstrations throughout North America. Contact him at trowelanderror@protradepub.com.

PRODUCT NEWS

New Super Color stain colors from Clemons

Clemons Concrete Coatings has added three new colors to its line of Super Color exterior-friendly stain.

The colors are: Gilded, a soft golden color; Java, a dark brown with no red undertones; Hickory, a warm brown with some red undertones; and Tumbleweed, a reddish brown.

Super Color is a concentrated stain that dilutes in acetone. On a properly prepared surface, these stains can be applied and sealed in as little as one day. The colors' semitransparent properties allow the variations in the substrate to enhance the final look.

www.ccc-usa.com

New Concrete Dye from Super-Krete

Super-Krete's Concrete Dye is a simple-to-use, fast drying pigment for use on interior concrete and cementitious toppings.

Concrete Dye is formulated by using extremely fine molecules of color designed to penetrate and color any concrete surface when mixed with acetone. It is a safe alternative to traditional concrete coloring and staining methods. It can be used to enhance already-colored concrete and is perfect for use on polished concrete.

Concrete Dye is available in 12 standard colors.

www.super-krete.com

Clemons acrylic resin stains now offered with low VOCs

Clemons Concrete Coatings' Solid Sealer Stains are now available in a low-VOC formula.

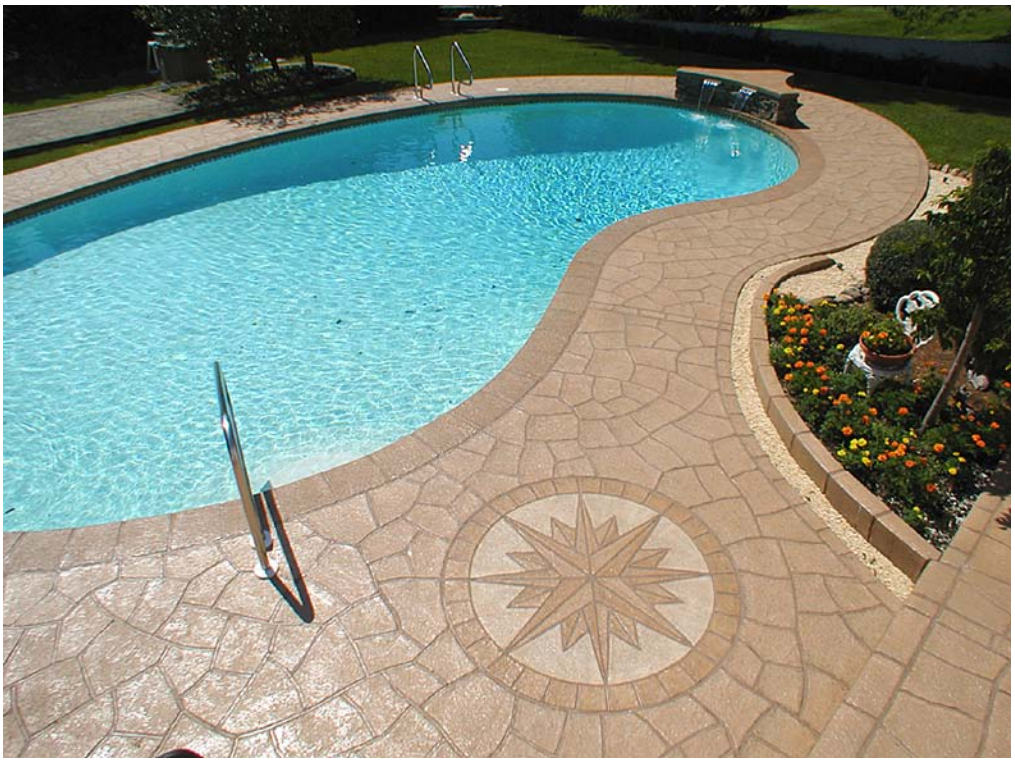
Super Sealer Stain is an acrylic resin stain formulated especially for concrete. When applied properly it resists cracking, chipping, peeling and mildew. It dries to a semigloss and resists oils, detergents, acids, salts and other chemicals. Super Sealer Stain is available in 25 standard colors and three colors designated as "cure and seal."

The product is available in 1-gallon and 5-gallon pails.

www.ccc-usa.com

Stamping Concrete the Old-Fashioned Way

by Todd Fisher
Unique Concrete, a family-run business out of West Milford, N.J., stamps concrete without the stamp and texture mats of today. Instead, they use old-fashioned tools to create a layer of what they call "cast-in-place concrete tile or stone." Here, Todd Fisher, son of Unique owner Barry Fisher, explains the company's innovative two-part technique.



Photos courtesy of Unique Concrete

On a typical new-construction job, our company begins with the preparation of the grade and formwork. The total thickness of the concrete would depend on what type of application we are dealing with, but typically we look to pour around 5 inches.

Once the grade is prepped properly, we place our rebar. We usually use 1/2-inch rebar unless something else is specced. We ensure that the rebar is properly elevated in preparation for the delivery of the ready-mix truck.

Once the truck is on site, we place the desired amount of 2 1/4-inch structural fibers in the mix. These fibers are Forta-Ferro, from Forta Corp., and at certain doses, they are designed to replace steel. However, we always use these in conjunction with the 1/2-inch steel rebar, and the dosage will depend on the job, the pattern and the desired spacing of the control joints.

Since we are not stamping this part of the pour and it is for structural purposes only, we can pour a nice tight mix to keep our water-to-cement ratios low and move at a proper pace to ensure that all of the reinforcement is where it needs to be.

Once the concrete reaches a proper consistency, we use a scarifier on the surface to ensure a nice rough finish that will be ready to receive our decorative layer. We usually lay out our saw cuts and place them in the wet concrete the same day we pour the structural slab. This way we do not have to worry about creating dust. In most cases

we will then come back the next day to begin our stamping process, or as we like to call it, the application of our cast-in-place concrete tile or stone.

The stampable layer

We begin the stamping portion of the job by getting loads of concrete sand and portland to the job, since all mixing for this step is done at each job site. We can then ensure that all of the ingredients are added to the mix, plus the proper amount of integral color, and that the portland and sands are the same shades. Since we are only stamping an inch or so of concrete, we can use integral colors and more expensive chemicals in the mix without drastically affecting the budget. (We are currently using a hydration-improving admixture from Enhance Solutions.)

Once each batch is mixed, it is wheelbarrowed into place where it is then screeded, troweled, and textured with our texture rollers. Once the texture has been applied, we will knock down the high spots to create a texture that is cooler and more comfortable for barefoot traffic while still providing slip resistance and visual pleasure. We then wait for the concrete to get to a certain consistency so it can be imprinted and hold its shape.

We then place our stamps or cookie cutters into the wet concrete and basically use them as platforms to work our way across the slab.

After all of the stamping is complete we come back the next day and rub the entire surface with a rubbing stone to ensure there are no rough edges. We then apply a lithium siliconate densifier to the surface

This slab was scarified to create a mechanical bond for the layer of decorative concrete to grip.

Timothy Fisher applies texture using Unique Concrete's custom-made roller.

Custom-made "cookie cutter" stamps designed and fabricated by Barry Fisher.

for increased durability.

We will then begin our grouting process. We use a polymer-modified grout that, like the decorative concrete, is mixed on-site using integral colors. Using the same integral colors that we use for the stampable layer, we can achieve any color that the customer chooses, although recently we have had more and more customers request an uncolored grout to achieve a more natural-looking product.

The grout is applied with a traditional masonry grout bag, then tooled just as it would be done with a real stone product. Once all the excess grout is removed from the surface, we clean it all up and it is ready to be sealed. We have switched to water-based acrylics and densifiers for our sealing process, since they age much more gracefully and this product does not require resealing to maintain color differences between the grout and concrete. These sealers are also much more user-friendly and environmentally friendly.

Why our process beats the mats

These are several advantages our process offers compared to using mainstream stamping and texturing tools.

Quality control. We have the ability to break the job into controlled sections regardless of the size of the job. Since the finished topping layer is only about 1 inch thick, it can be mixed on-site. This means we have total control of the portland (which can have potentially different shades), the sand (different shades and grades), the fibers, and the integral color (different lot numbers).

Usually we mix enough to go saw cut to saw cut — we mix enough material to place, trowel, texture, and stamp that section, and once that is complete we move on to the next. This is more labor-intensive, but you can move through a job at a controlled pace. This allows you to work better with changing weather conditions as well as different-size crews. This also allows more time to incorporate our saw cuts into the patterns.

Many stamped concrete companies come back the next day and just cut right across their patterns. Since we take the race out of the job, we can take the time with certain patterns to make the saw cuts a focal point. An example of this would be creating a rowlock brick look.

Patterns are easily customized, as are medallions. Since the process is easily controlled, we can alter certain stamping tools or cookie cutters to create different patterns. This allows us to offer more patterns without having more tools laying around. While this does create more handwork by essentially requiring us to carve the wet concrete, it also lets us customize our patterns and medallions for each job. This creates a truly unique product.

Expensive additives cost less per job. Since the topping layer is only approximately an inch in thickness, pricey integral color as well as more expensive chemicals can be added to the mix. For example, we are currently using a PMT additive from Enhance Solutions in our topping mix. This is a liquid pozzolan that offers an enormous amount of benefits, such as increased density and abrasion resistance. The negative to this type of product is the cost — it would be almost impossible to add it to a full-thickness slab and compete

When hand-chiseling borders, you can create custom border shapes and sizes.

Larger voids allow the use of enough grout to withstand severe freeze/thaw cycles.

with regular stamped concrete or pavers. We can do it in a cost-effective manner. Likewise, integral colors can be used in a cost-effective manner since you are only coloring an inch of material. This allows for a better depth of color than the color hardeners without wasting color in a full-thickness slab.

The work can be more heavily reinforced. If you compare this process to the process involved with wet-laying bluestone, you can begin to see the benefits. When you have to pour a slab and then worry about stamping it, usually quality and strength are sacrificed. In a lot of circumstances the mix is much wetter than is recommended and the placement of the steel reinforcement is often overlooked. Our process breaks the job up into two pours — the

Polymer-modified grout is applied using a traditional masonry grout bag. Grout can be any color or left uncolored for a traditional look.

Travis and Timothy Fisher tool the grout once it is at a proper consistency.

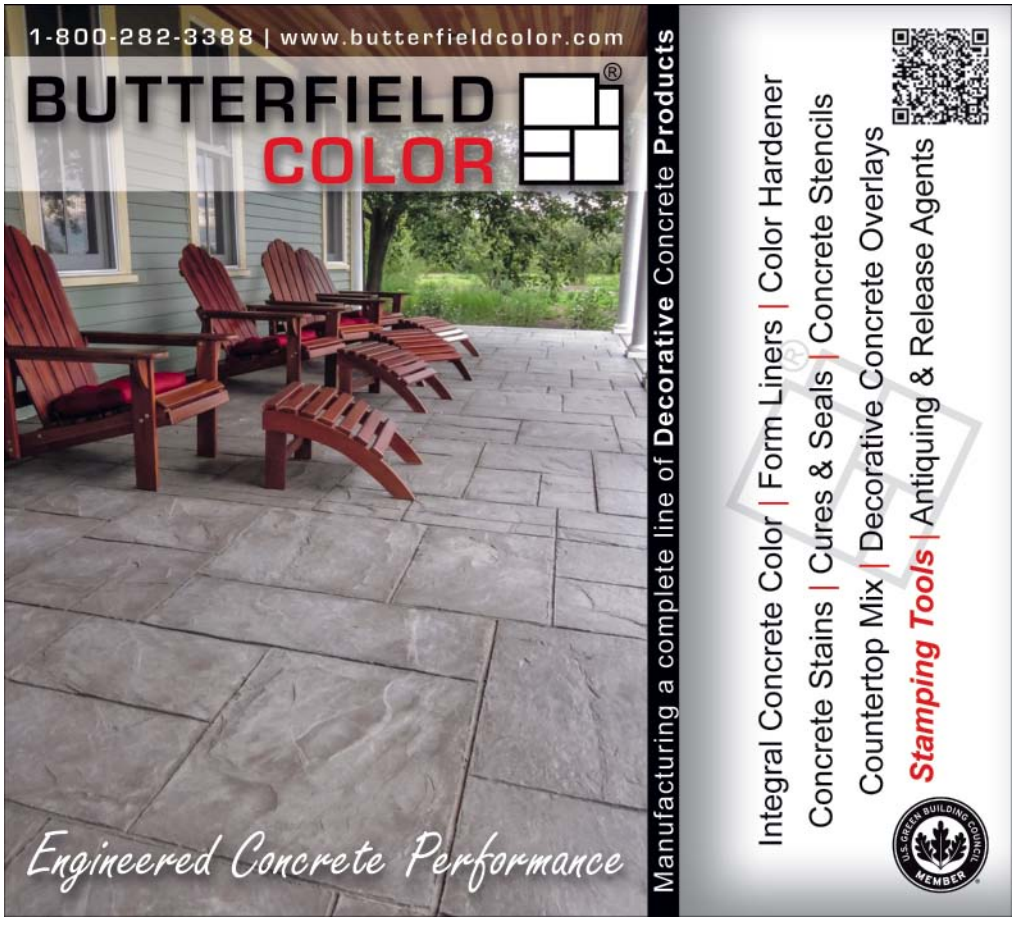
structural slab and the finished layer.

By just focusing on the structural slab, we can place more steel and more structural fibers than any other stamped concrete process does. We can dose the polycarboxylate in high doses to reduce water and not have to worry about finishing it. In certain situations we can add PVA fibers that approach the levels of engineered cementitious concrete (ECC), which would interfere with finishing.

Custom colors and borders can be done more easily and cost-effectively. Since everything is mixed on-site and at a minimal thickness, colors can be switched at any point in the job without having to worry about minimum orders and washout charges from the ready-mix suppliers.

We can modify our textures from job to job. Since we use a textured roller and knockdown finish, we can adjust the amount of texture for any job condition. With mats, the texture is incorporated with the pattern, which means you don't have many options. We can take any one of our patterns and use it on a steep sloped driveway or inside a house in a living room.

The texture is applied with the roller, then knocked down with a trowel. This also creates peaks and valleys, which makes the concrete more comfortable for barefoot traffic in the hot sun.



Pattern sizes can be adjusted for different-sized jobs. This mainly applies to two of our in-house patterns, but some others also fall into this category. For example, with our random ashlar pattern and our fieldstone we can increase or shrink the size of the shapes, so the pattern isn't too big in a narrow sidewalk or too busy on a large patio.

A more realistic appearance. Since our product is actually grouted with a real grout, the result is a much more realistic-looking product. We do not need to rely on stains and color releases for faux grout lines. We are not trying to mimic other products — instead, we market it as "cast-in-place concrete tile." Since the grout joint is roughly 1/2 inch wide by an inch deep, the grout will last. We have seen others try to grout jobs done with mats, but there is not enough of a void created for the grout to last in a freeze/thaw climate.

This also allows us to not rely on constant resealing of our product. Most other stamped concrete needs to be resealed constantly to preserve the difference between the stamped concrete area and the faux grout lines. This is not needed with our product. This allows us to compete with concrete pavers more aggressively, since many paver installers claim stamped concrete always needs sealer, which they call a hidden cost. Also, without layers of sealer, the concrete has a more natural look.

By stamping deep we reduce the risk of cracking in more obvious areas. Since we stamp so deep and wide, we create weak spots in the concrete, which helps to essentially camouflage any shrinkage cracking. If shrinkage cracks do occur, they quickly pick up one of the weak spots and follow them, and since these weak spots are grouted, the cracking is often unseen.

We create a resurfacing product that is very interesting. We have been able to win many resurfacing contests over the years, as well as create a product for which we can offer a lifetime guarantee against delamination in a pretty severe climate.

Finally, here are a couple of drawbacks to our method:

It's very labor-intensive. Not only are we finishing the concrete, but we are also mixing it on-site. This requires a large mixer and proper supervision of the materials going into the mix. It may take nearly twice as long to complete certain jobs compared to crews using mats.

A lack of suppliers for these types of tools. Since most use mats for stamping, suppliers mainly focus on that field. This has meant that we have had to design and build many of our tools that we use. This can also be seen as a benefit, since it makes us one-of-a-kind and the only ones in the country with certain patterns.

Todd Fisher works on installs, research and development and online marketing for Unique Concrete, based in West Milford, N.J. His father, Barry, established Unique in 1980, and his brothers Travis and Timothy Fisher also play key roles in operating the family business. Todd can be reached at todd@uniqueconcretenj.com.

PROJECT PROFILE

Hileman Backyard

Los Cabos, Mexico

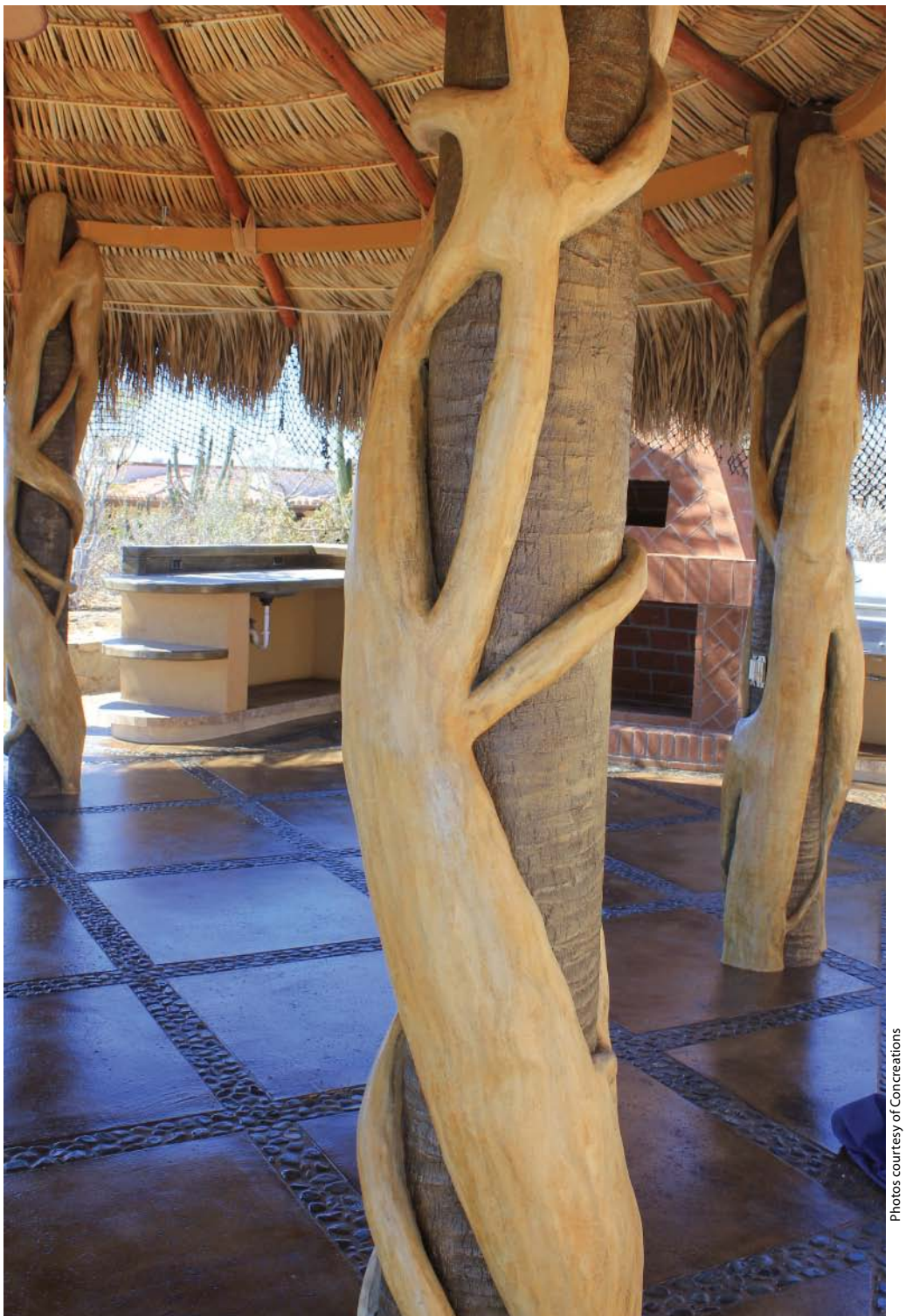
by Liz Schick

A PALM-ROOFED outdoor living area in Mexico is called a "palapa," and when Robert Hileman bought his vacation home in Los Cabos last year, palapas were on his mind. He wanted to turn his backyard into a large (1,000-square foot) and luxurious outdoor living space, complete with a palapa for shade. But he also wanted it to be easy to keep up —and he wanted the five pillars supporting the palapa to be made from coco palm tree trunks surrounded by strangler vines winding sinuously up the trunks.

When artisan Jay Manning heard what Hileman wanted, his first thought was rot and termites and other wood-eating insects.

The home's prior owner, a general contractor, suggested Hileman contact Manning. Since opening up shop in 1989 after moving to Los Cabos from San Clemente, Calif., Manning and his company, Concreations Inc., had become known throughout the region for true concrete artistry.

"Because of the humidity and the fact that this area is really a semitropical area, it teems with termites and other wood-eating insects," Manning says. "So pillars constructed of actual coco tree trunks



Photos courtesy of Concreations

Project at a Glance

Client: Robert Hileman, Los Cabos, Mexico

Decorative Concrete Contractor: Jay Manning, Concreations Inc., Los Cabos, Mexico

Timeline: 6 weeks, including 2 for demolition

Crew: 10

Project Specs: Build a 1,000-square foot low-maintenance outdoor living area, fashioning concrete to resemble native wood.

Materials Used: L. M. Scofield Co. Lithochrome Chemstain Classic acid stain in Padre Brown, Antique Amber and Dark Walnut, L. M. Scofield Co. Lithochrome Antiquing Release in Walnut, Sonotube concrete forms, Visqueen plastic sheeting from British Polythene Industries, Euclid Chemical Co. Everclear acrylic sealer

wouldn't last very long. And the owner wanted the area to be low-maintenance. The same thing held true for the entire backyard area, on which I didn't use a piece of wood. Well, the doors on the outdoor kitchen cabinets are wood, but that's all."

The result, after two weeks of demolition and four weeks of work by a 10-man crew, was a 500-square foot palapa roof over the raised portion of the deck, which extends out to encompass a concrete kitchen area that includes a stove, barbecue grill and wood smoker, plus a fire pit over concrete decking designed to resemble the local habitat.

The decking itself consists of 4-foot squares with river-rock inlays flowing between. "Jay poured the slabs, pulled out the forms and then set a concrete base between them," explains Hileman, the owner. "Then he hand-selected and placed individual flat river stones where they would have the most natural effect."

Manning describes the decks in more detail. "The concrete decks were smooth-troweled. But while the concrete was still wet, and before the last troweling, we broadcast clumps of moistened baking

soda all around, which gives the concrete a pitted, travertine look." After that, the decks were acid-stained using Antique Amber and Dark Walnut colors from L. M. Scofield Co.

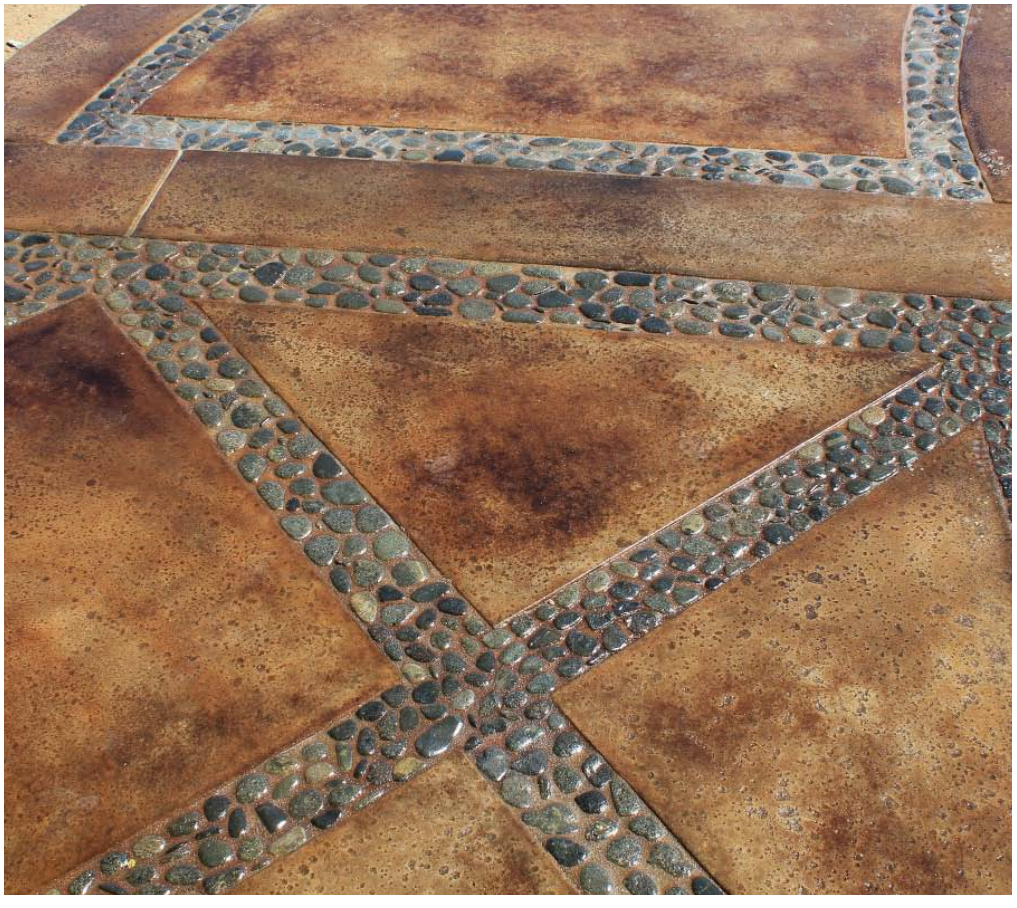
The fire pit was dug out 2 1/2 feet below the deck, then built back up to deck level with steps and seats. Guests can sit around the fire and still enjoy the view of the ocean. The pit area was constructed of block and brick with a decorative surround of river stones. It was covered with smooth-troweled burnished plaster and acid-stained to complement the decking.

Concrete coco trees

As for Hileman's original vision of using actual coco logs in construction, remember "termites" and realize it is nice to fool Mother Nature — and human guests — in the name of maintenance.

"First," Manning says, " I made latex texturing skins from the bark of a real coconut palm. Then I poured concrete into a Sonotube and made it an irregular shape."

Hileman says he saw Manning take an axe and beat up the sides of the concrete posts. "I ran out and asked, 'What the hell are you guys doing? I just paid you good money to



put these posts in.' What they were doing was making the concrete pillars uneven. Each was different, like every tree is different."

After beating up on the concrete pillars, Manning plastered over them and used the latex skin as a pattern stamp for the finished, textured plaster. The team used a Walnut release agent from Scofield, then a really light fogging of Scofield Antique Amber acid stain.

In nature, strangler vines grow around the base of coconut trees. Birds nesting in the trees eat fig seeds and then drop the seeds, which sprout and grow up around the coconut palm. The vines ultimately strangle and kill it. "They look really cool and tropical," Manning says, "but they get insect-infected and don't last very long, so I had to figure out a way of 'faking' them as well as the palm trees."

The vines were made with nylon rope and rolled Visqueen plastic sheeting, both wrapped together in diamond lath and covered with GFRC spiked with polymer modifier (because it's so flexible). The nylon rope and rolled-up plastic sheeting give the finished GFRC creations the free-flowing look of actual vines. They were acid-stained with Antique Amber and a little bit of Padre Brown, then sealed with Euclid Chemical's Everclear acrylic sealer.

Because the concrete pillars are hollow, they carry electric wiring for audio, video and lighting for the entire entertaining area. (There are television screens inside the roof of the palapa.)

"Without question," Hileman says, "Jay can make almost anything out of concrete that can look like wood. When we saw how great the palm trees looked we almost told him to stop and not do the vines because the trees looked so cool. But when the vines were finished, we realized they looked even cooler. It turned out every bit as good if not better than we ever dreamed it would be. Jay is truly an artist with concrete, and we've since brought him back to build a casita (guest house) and work more of his concrete magic."

concreationsinc.com

PRODUCT NEWS

Oldcastle Architectural introduces masonry stone veneers

Oldcastle Architectural has created Artisan Masonry Stone Veneers, a collection of high-density, prefinished architectural concrete masonry units whose designs reflect timeless aesthetic appeal with artisanal, hand-cut appearances.

Because they are manufactured with a high-performance water-repellent admixture, Artisan Masonry Stone Veneers resist moisture, mold and efflorescence staining. The aggregates of each stone are mixed throughout to prevent color fading. The new line includes Cordova Stone, Franklin Stone, Waterford Stone, Dufferin Stone, Lamina and Slatestone.

Each product is available in multiple sizes, and all are suitable for residential, commercial and institutional applications. Additionally, all of the products in the Artisan Masonry Stone Veneers line can be cut and shaped in the field.

www.artisanveneers.com

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