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publisher's LETTER

Dear Readers,

It's my opinion that *Concrete Decor* is the most informative and by far the best-looking magazine in the construction industry today. I get a lot of high fives from industry insiders. I get them from occasional outsiders as well. This happens most often when a copy of *Concrete Decor* veers off-track and is delivered to the wrong mailbox. Subsequently, we get a caller saying, "Wow. I never knew you could do that with concrete."

Now I'm certain there are a few guys who will agree with me when I say that raving about how great I think I am or how good my work is will generally lead to a less-than-sexy rolling of the eyes by my wife. I do agree that when we get caught up in how good we think we are, we lose perspective and interest in other people's opinions, and more importantly, the role they have in helping us to reach higher. Understandably, when we forget about them, we lose their interest, their support and more importantly, their respect.

So, aside from what I think about *Concrete Decor* magazine, who really determines whether *Concrete Decor* is the "best" magazine? And frankly, is it that important? Certainly we want something that defines our industry and connects us to each other, but we also accomplish this by the manner in which we conduct ourselves each day.

I've learned, mostly from friendly reminders, that there is always room for improvement in the pages of *Concrete Decor* and yes, with me too. It seems that the line that distinguishes good from bad in our business life is always shifting, but I don't necessarily think that's a bad thing. However, this environment can become exhausting if I have only opinions to lean on. That's why education, networking and a constant bent toward self-improvement need to be regarded as lifelong processes. They require an investment of our time and resources and, yes, some ongoing self-examination, but with the right perspective, not even our worst situations are all that bad.

I like to go to church on Sundays because, besides learning ways to become a better person for others, I see there a line in the sand that does not move from hour to hour or day to day. In this place I connect with a God who loves me unconditionally and who is tremendously helpful in keeping an important part of me — my attitude — in check.

Enjoy this edition of *Concrete Decor.*

Sincerely,

Bent Mikkelsen
Publisher

concrete DECOR®
THE JOURNAL OF DECORATIVE CONCRETE

February/March 2012
Volume 12 · Issue No. 2

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Subscriptions: USA (one year): $22.95
Canada (one year): $32.95
Other countries: $64.00
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

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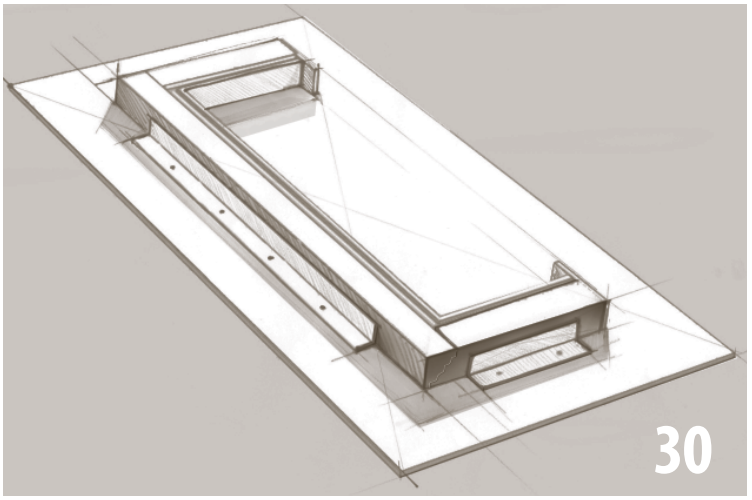

FEATURES

SAN ANTONIO DECORATIVE CONCRETE

The home of the 2012 Concrete Decor Show, San Antonio, Texas, is a city that has embraced decorative concrete at a number of high-profile locations. Check out a few of our favorites throughout the pages of this issue.

BUSINESS & INDUSTRY

On the cover: Absolute ConcreteWorks LLC, of Poulsbo, Wash., created 1,500 square feet of GFRC panels to simulate shelved books for the main lobby of a new building at the Amazon.com Inc. headquarters in Seattle, Wash. To learn more, turn to page 94.
Photo courtesy of Roger Turk, Northlight Photography

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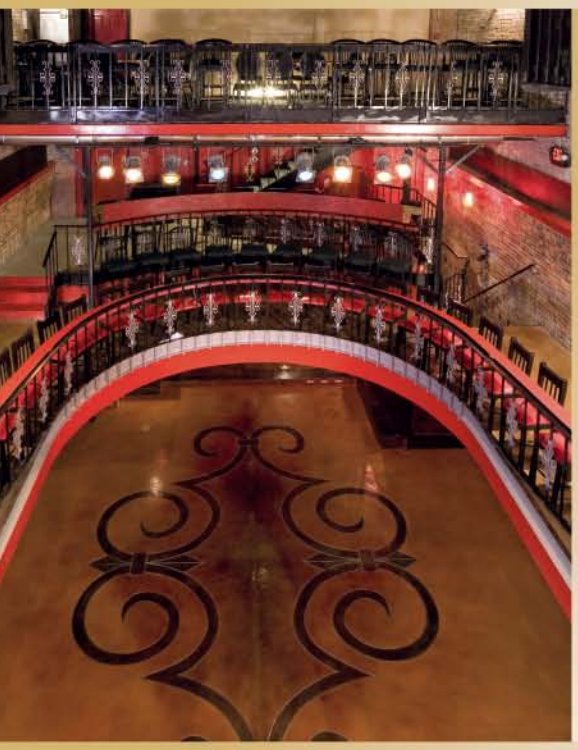

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DEPARTMENTS

Photo by Joe Woolhead courtesy of National September 11 Memorial & Museum

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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 41.*

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. See Jennifer's column on page 67.*

Trevor A. Foster, *regional sales manager and principal trainer for Miracote Products, a division of Crossfield Products Corp., is a regular contributor to industry trade publications and training events. He can be contacted at trevorf@cpcmail.net. See Trevor's article on page 44.*

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 52.*

Chris Karlik *is a fourth-generation sculptor and mold-maker who grew up around precast concrete. He works for Florida Statuary and Mold Inc., of St. Petersburg, Fla., and Absolute ConcreteWorks, of Poulsbo, Wash. He can be reached at crk@karlik.com. See Chris' article on page 50.*

Jeff Kudrick, *product manager for J&M Lifestyles LLC, based in Randolph, N.J., is an award-winning creator of concrete kitchen and bath fixtures, fireplace surrounds, furniture and architectural details. For more about his processes, custom-designed product molds and engineered concrete mixes, contact info@infinicrete.com. See Jeff's article on page 30.*

Chris Sullivan *is vice president of sales and marketing with ChemSystems Inc. Contact him at trowelanderror@protradepub.com. See Chris' column, "Trowel & Error," on page 80.*

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 16.*

Talk back! Weigh in online at ConcreteDecor.net

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business & INDUSTRY

INDUSTRY NEWS

The Concrete Countertop Institute moves training center to Chicago

The Concrete Countertop Institute has moved its primary training location to the Chicago area. All hands-on classes will be held at the Concrete Countertop Supply by Fishstone facility in Elgin, Ill.

There will be no change in curriculum or instructors. Jeff Girard, president of The Concrete Countertop Institute, will continue to personally instruct the classes, held every two to three months.

(888) 836-7711

www.concretecountertopinstitute.com

Delta Performance Products LLC acquires Mandala Design

Delta Performance Products LLC has acquired the assets of concrete countertop outfit Mandala Design, of Ashville, N.C., and has established Mandala Studio in its Covington, Ga. headquarters. Delta now operates two divisions, Blueconcrete and Mandala Studio.

Blueconcrete provides admixtures and colors for countertop and precast manufacturers. Mandala Studio produces custom precast concrete countertops, furniture and other elements. Jeremy French, formerly of Mandala Design, will manage the operations of Blueconcrete and Mandala Studio.

www.blueconcrete.com

Wind-lock plans debut of Reno warehouse and distribution center

In the first quarter of 2012, Wind-lock will begin stocking and shipping from a new distribution center in Reno, Nev. This will be Wind-lock's first facility in the Western United States.

The warehouse will be stocked with a full complement of products, including a complete drywall tool line and key items in EIFS, weatherization and Stealth product lines.

www.wind-lock.com

New group supports concrete artists

A new international organization called the International Syndicate of Concrete Artists (ISCA) has been established to help support concrete artisans and the related trades.

The ISCA's mission statement, as presented in a press release from organizer and concrete caster Tommy T. Cook, is as follows: "To provide a mutually supportive and constructive environment in which every member has the opportunity to develop communication with peers, access or contribute relevant information in order to better the industry as a whole, to help market and brand the value of the art we create … and to have fun doing it, damn it!"

An open forum will be held at the 2012 Concrete Decor Show in San Antonio, Texas to get input from artisans and others.

www.concretecountertops.ning.com/group/the-concrete-artists-club

Tommy T. Cook founds Gnomeadic Arts

Tommy T. Cook, The Traveling Concrete Gnome, has announced the launch of his new company, Gnomeadic Arts Inc.

The new company will be a collaborative-type company concentrating on partnerships for training, marketing new products and education for specifiers. Cook will be working in conjunction with the International Syndicate of Concrete Artists to help promote the trade and its artisans. The company will revolve around Cook's travels but will expand into other training and product development areas.

www.gnomeadicarts.com

Hyde Tools launches digital catalog

Hyde Tools has launched a new interactive digital master catalog. The digital flip-book publication provides a complete listing of all Hyde products, with product descriptions, photos and selected how-to videos. The catalog features an interactive table of contents and index. It allows readers to search content by keyword, product code, product name or category.

www.hydetools.com/catalog

ICRI announces 2011 Project of the Year and Awards of Excellence winners

The International Concrete Repair Institute has announced the winners of its 2011 Project Awards.

ConTech Construction LLC, of Winter Garden, Fla., was presented with the 2011 Project of the Year Award for its work on the Royal Floridian Resort, a seven-story vacation resort in Ormond Beach, Fla. Originally built in 1973, the building had been altered several times over the years, but progressive deterioration caused by the harsh saltwater environment had never been addressed. The concrete deterioration was so severe that the balconies and walkways had to be completely removed and replaced with new concrete containing a corrosion-inhibiting admixture. The team also executed an architectural aesthetic makeover that transformed the worn-out, drab facility into a gorgeous, modern destination resort.

event calendar

Concrete Decor Show

Feb. 20-24, San Antonio, Texas

(877) 935-8906

www.concretedecorshow.com

American Concrete Institute Spring Convention

March 18-22, Dallas, Texas

(248) 848-3700

www.aciconvention.org

In addition to the Project of the Year Award, ICRI awarded eight 2011 Awards of Excellence and 13 Awards of Merit. Detailed descriptions of the winning projects can be found on ICRI's website.

www.icri.org

Super-Krete opens Texas location

Super-Krete International recently announced plans to expand its operations to Kyle, Texas, located between Austin and San Antonio. For Super-Krete, a manufacturer of complete systems and products for the waterproofing, repair, restoration and beautification of concrete, the new location means accessibility to customers in the expanding Texas market, the Midwest and the East Coast. The new location will provide product and training services, be available for retail sales and will have a small showroom.

(800) 995-1716

www.super-krete.com

Decorative concrete contractors win praise at World of Concrete contest

To honor hardworking crews in the construction industry, the World of Concrete trade show created the "Crews That Rock" contest, sponsored by BASF for WOC 2012.

Winning third place was Impressions Concrete, an Ottawa, Ontario, company that has roots in the decorative concrete sector.

Impressions Concrete recently helped three families who were scammed by a con artist out of thousands of dollars and then walked away from their projects. Impressions Concrete helped these victims by completing their projects at a discounted rate and helped them to file reports with the police to pursue criminal charges for fraud. In addition, Impressions Concrete has helped connect others who have been scammed by the same company.

Honorable mentions were given to two other decorative-type concrete projects, a skate park project by Team Pain, Winter Springs, Fla., and Nashville, Tenn.-based Concrete Mystique Engraving's decorative concrete work at the Nashville Dinner Theater.

www.worldofconcrete.com

Stain maker announces contest

NewLook International Inc. has announced its Install It, Share It, Win It! 2012 video contest.

Contestants are challenged to record projects where they install NewLook stain products and submit an entry form that includes a link to the video on YouTube. The author or representative of the winning video will win a 2012 Harley Davidson Superlow motorcycle or $5,000 cash.

Runner-up prizes may also be awarded, depending on the number of entries.

Submissions are due by Feb. 28, 2013.

www.getnewlook.com

Super Stone celebrates 50th

Super Stone is celebrating 50 years of assisting concrete contractors with quality products, support, and training. Founded by John Buhler in 1961, the Opa Locka, Fla., company has grown from a 600-square-foot

Photo courtesy of Dusty and Sons Concrete LLC

Dusty and Sons Concrete LLC won an award for commercial decorative flatwork from the Tennessee Concrete Association in 2010 for this job at a pool house in a Spring Hill, Tenn., subdivision. They won two awards in 2011.

Construction Industry Management News

CIM program releases annual report

The Concrete Industry Management (CIM) program — a business-intensive program that awards students with a four-year Bachelor of Science degree in Concrete Industry Management — has released its 2010-2011 Annual Report. The report was compiled by the CIM National Steering Committee.

Accomplishments in the past fiscal year include the establishment of a unique Master of Business Administration (MBA) degree in CIM. Also, the International Concrete Repair Institute, recently became a member of the CIM NSC.

www.concretedegree.com

Annual auction breaks record

The CIM National Steering Committee raised more than $617,750 in gross revenue at its seventh annual auction, held in conjunction with World of Concrete 2012. The auction surpassed last year's total proceeds by more than $100,000 and exceeded the previous record by $50,000.

www.concretedegree.com

A CIM testimonial from Tennessee

Concrete Decor put the word out to CIM programs around the country to get testimonials from CIM graduates who have made good in the real world. Here's one from a Spring Hill, Tenn., contractor.

"My name is Josh Cornwall, and I am partners with my father at Dusty and Sons Concrete LLC. I graduated from the CIM program at Middle Tennessee State University in December 2003. Our business is located in Middle Tennessee and we offer many different concrete services.

"We started our business in 1998 pouring cast-in-place concrete walls, basement slabs, broom-finish slabs, exposed pea-rock concrete and footings. While I was in the CIM program I learned a lot about decorative concrete and wanted to start stamping and acid staining. Once I graduated, we started to experiment with decorative concrete. Now we offer different stamping patterns, achieve colors by using color hardener or acid staining, and do engraving, cutting, exterior countertops and overlays. Our broad range of concrete services has kept our business alive during the downturn."

Dusty and Sons won two 2011 Concrete Awards from the Tennessee Concrete Association, for Best Concrete Home and for Best Commercial Decorative Finishing (at Creekside at Three Rivers Assisted Living, in Murfreesboro, Tenn.)

(615) 473-0123

www.DustyandSonsConcrete.com

office and small warehouse to encompassing a warehouse more than 60,000 square feet in size, plus two additional locations in South Florida and one in Las Vegas. Originally named Super Surface, the company changed its name to Super Stone in 1978.

Super Stone offers color hardeners, release agents, stains, dyes, overlays, toppings, integral color, epoxies, sealers and texture mats.

www.superstone.com

New distributor for Lavina system

The Lavina system from Superabrasive, including machines and tooling, is now available through Niagara Machine Inc. The distributor has locations in Erie, Pa., Charlotte, N.C., and West Berlin, N.J.

(800) 622-2048

www.niagaramachine.com

Fiber-reinforced concrete test results covered in proposed ASTM standard

A proposed new ASTM standard will provide proper direction and ensure adequate documentation to aid in the interpretation, understanding and reduction of variance in test results for fiber-reinforced concrete.

ASTM WK35250, Practice for Fiber-Reinforced Concrete for Making and Curing Test Specimens in the Laboratory and Field, is now being developed by Subcommittee C09.42 on Fiber-Reinforced Concrete, part of ASTM Committee C09 on Concrete and Concrete Aggregates.

ASTM WK35250 describes testing done by means of external vibration, which is effective for fiber-reinforced concrete. Testing agencies and those who specify testing of fiber concrete will use the proposed standard once it has been approved.

All interested parties are invited to participate in the development of ASTM WK35250.

(610) 832-9585

www.astm.org

Michelman hires three for growing Chemical Specialties unit

Michelman continues to expand its Chemical Specialties team with the addition of three professionals who boast extensive experience in key markets. The Chemical Specialties group at Michelman develops water-based surface modifiers, additives and polymers for numerous

industries, including wood and floor care, industrial coatings, inks, paints, and construction products.

Dave Rupp has come on board as a regional business development manager. Rupp will focus on the Western United States and wood product applications.

Mike Selby has joined the company as a regional sales manager. He will be responsible for managing Michelman's Americas Chemical Specialties sales team, in addition to supporting regional customers with application and market expertise.

Chad Forsthoefel has been hired as a research chemist and will focus on developing new water-based formulations for Michelman's burgeoning construction and wood coatings industry segments.

www.michelman.com

General manager named at Blastcrete

Blastcrete Equipment Co. has appointed Maury Bagwell as general manager.

In his new position, Bagwell's primary responsibilities are product development and engineering, management of employees and quality control.

(800) 235-4867

www.blastcrete.com

Proline hires Northeast sales rep

Proline Concrete Tools has hired Jim Lidowski as its new Northeast sales representative. Lidowski has owned a decorative concrete contracting company in Maryland and Delaware, and he has more than a decade of experience in sales, training and technical service positions.

www.proline.com

Husqvarna promotes two

Ron Rapper was appointed to business development manager of Husqvarna Construction Products. In this role he will be responsible for helping to develop sales strategies and grow the heavy-user business in North America.

Ryan Wesselschmidt was appointed to director, heavy user sales of Husqvarna Construction Products. He will be responsible for leading the sales efforts for professional construction equipment across the United States.

www.husqvarna.com

Spancrete names human resources VP

Spancrete, a leader in the precast/prestressed concrete industry, has promoted Scott Bertschinger to vice president of human resources and risk management.

A Spancrete employee since 1997, Bertschinger most recently served as the company's corporate director of human resources and risk management. His new responsibilities include all human resources, safety, insurance and risk management activities, as well as the environmental oversight of all manufacturing and construction activities.

www.spancrete.com

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www.ardex-pandomo.com

FUNDAMENTALS OF BUSINESS

Net Benefit and Increasing Your Value to Customers

by Jacob Webb

Your product is valuable. You know it. You hope your customers know it. But how can you be sure? How can you ensure that your product benefits your customers and, in so doing, benefits your company?

This article focuses on how you can create and deliver value to your customers, which requires the presence of a "net (customer) benefit" and an understanding of service gaps.

Establishing a net benefit

What is a net benefit? It's the sum of how much customers want you to install decorative concrete for them (i.e. gross benefit) minus the price you charge: Gross Benefit – Price = Net Benefit.

In this equation, "price" includes money, time, business or lifestyle interruption, energy, opportunity costs and everything else a customer must sacrifice when hiring a professional decorative installer. The key to establishing this much-needed net benefit is to ensure customers want your service more than its price.

"Interesting," you say. "But how exactly do I establish a net benefit in my business?" One word: marketing. A net benefit will exist only when customers perceive your product to be more valuable than your price. And customer perception is created and managed through the use of (strategic) marketing. Thus, one of the first responsibilities of entrepreneurship is to use marketing to create and manage customer perceptions about your business and product.

Your marketing message, whether it's delivered through print ads, online ads, fliers or even business cards, must explicitly communicate what differentiates your business from your competition. This differentiator, which can often be your most compelling competitive advantage, can be identified by soliciting feedback from your existing customer base about why exactly they hired you instead of your competition.

One of my Certified NewLook Installers seeks to extract as much feedback from previous customers as possible. In doing so, he learned that a major factor in customers' decisions to hire him was that he smiled more than his "ornery" competition. Seriously. So he reinforced his congenial reputation in all of his direct mailing advertisements by using a professional-looking picture of himself grinning from ear to ear and the slogan, "Your FRIENDLY Professional Decorative Installer." Since he began this initiative he has seen a very positive response to his marketing efforts and an increase in new customers.

If you are able to establish a compelling value proposition in the minds of prospective customers (e.g., a large gross benefit) then you will have more room to raise your price. But if customers see you as just another decorative contractor, you will be subject to discount pressure. In fact, when price becomes the critical factor in your customers' decision to hire you, your sales pitch did not effectively communicate your true value proposition. This is a red flag — a signal for you to remind your customer about what you do better than anyone else.

Closing service gaps

The easiest thing to implement in your business is providing customer service. But customers have certain expectations about how your service should be delivered. When you fail to meet those expectations, "service gaps" result. Therefore, you should examine all aspects of your service delivery

Tips for Changing How Clients See You

- Solicit from your customers their perception of what differentiates you from your competition, and emphasize this in your marketing messages.
- Evaluate the net benefit you offer by examining your price stability. If customers are pressuring you to discount your price, then chances are your net benefit is low and should be reinforced through the use of marketing. If you're booked solid for three months out, however, then you likely have a strong net benefit and possibly room to raise prices.
- Interact with customers more frequently to understand and better manage their expectations of you and your service. This will help prevent confusion and resentment that can lead to awkward legal ramifications.
- Evaluate how well you meet or exceed customer expectations using the five service building blocks — reliability, responsiveness, assurance, empathy and tangibles.
- Empower your employees and installation team with the autonomy to act in your customers' best interest. Teach them to use their best judgment when satisfying customers.

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process and develop a service strategy that appropriately fits your target market.

The "knowledge gap" is the difference between your customers' expectations and how you perceive those customer expectations. For example, your customers may assume you will move their furniture before staining their basement floor and then replace it when finished. If you are not aware of this expectation, you won't be able to factor that labor into your bid.

To reduce knowledge gaps, you must understand your customers' expectations by conducting customer research and increasing your interaction with customers. Be honest and upfront. Ask questions. Get them talking. And for heaven's sake, listen!

It is often difficult for customers to evaluate your service quality — how well you meet or exceed expectations. However, according to experts Dhruv Grewal and Michael Levy in their book, "M: Marketing," customers will use five service dimensions, or service building blocks, to determine how well you deliver.

First, your ability to execute the project contract dependably and accurately reflects your reliability. This means you should do quality work or don't do it at all.

Second, customers evaluate your responsiveness by how willing you are to help them and provide prompt service. One of the fastest ways to destroy your credibility is to do shoddy work and then disappear if your customer calls to complain.

Third, customers look for assurance, which is your level of product knowledge and courtesy and your ability to convey trust and confidence. Remember, customers want to hire consultative experts, not smarmy salesmen.

Fourth, the caring, individualized attention you provide will help customers determine your empathy for them.

Finally, customers look for the tangibles of your business — the appearance of physical facilities, equipment and personnel.

The "delivery gap" is where the rubber meets the road. It pertains to the difference between your service standards and the actual service you provide to customers. Ongoing training and a culturally inbred commitment to quality are ways to set service standards for your installation business.

Most product suppliers and manufacturers offer hands-on training so you and your team can develop the competence you need to successfully achieve those standards. I challenge you to actively participate in those trainings even if you've been there, done that. No matter how many times you've attended the same supplier's product demonstration, there is always something new to learn.

Also, you should remember that employees take their cues from management. If you strive for excellent customer service, treat your customers well and demand the same attitude from everyone on your team, it is likely your employees will do the same.

Delivery gaps can be reduced when your employees are: 1) empowered to act in the customers' and your company's best interests, and 2) supported in their efforts so they can do their jobs effectively.

I once heard of an entry-level decorative installer who was left to finish a project while his supervisor visited another job site. During that time, the property owner approached the newbie installer and requested that he seal a small section of concrete that was not agreed upon in the original contract. The installer had an extra unit of sealer and happily complied without even hesitating. Rather than reprimand this worker for using unopened product material, the supervisor later praised the artisan for adhering to the company's standard of service quality.

You must identify and market your competitive advantage to establish a net benefit for your customers. This will give you room to raise prices, increase revenue and grow your business. Make legendary customer service your core. Identify and close the service gaps that inhibit your ability to create and deliver lasting customer value.

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.

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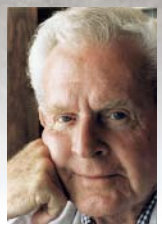
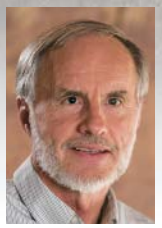
Decorative Concrete Hall of Fame

The 2012 Inductees


Mike Archambault


Brad Bowman


Clark Branum


Joe Nasvik

by Natasha Chilingerian

The Decorative Concrete Hall of Fame is pleased to honor its inductees for 2012: Mike Archambault, Brad Bowman, Clark Branum and Joe Nasvik. Continuing the tradition of welcoming its newest members at the annual Concrete Decor Show, the Hall of Fame announced the group at the 2012 show, held in February in San Antonio, Texas.

The Decorative Concrete Hall of Fame was established to recognize individuals and companies whose contributions have impacted the future of decorative concrete, both as a business and an art form. The new inductees were chosen by Hall of Fame members and the owners and staff of *Concrete Decor* parent company Professional Trade Publications Inc., which manages the Hall of Fame.

These four exceptional individuals have gone above and beyond in their careers, helping the decorative concrete industry thrive through their achievements and commitment to excellence and innovation.

Mike Archambault

Installer and educator Mike Archambault of Paris, France, spent the first phase of his career in Houston, Texas, where he owned both Patterned Concrete of Houston and Patterned Concrete Industries and served as an active board and committee member for the American Society of Concrete Construction and the American Concrete Institute.

Three decades later, the 55-year-old is still making strides in the decorative concrete industry as co-owner of the French manufacturer and distributor Moderne Methode and training school Béton Academy. He is playing an important role in the introduction of American decorative concrete materials and practices to Europe. And he never boasts about his accomplishments.

After selling his shares of Patterned Concrete of Houston and Patterned Concrete Industries in the mid-1990s, Archambault took an opportunity to assist a contractor in the United Kingdom, beginning his many years of serving the European market. Next, he worked on decorative concrete for Disneyland Resort Paris.

He spent three years as a Paris-based consultant for L. M. Scofield Co. before opening his own consulting and

installation company, Michael Archambault Béton Decoratif.

In 2006, he joined Elvepro, a product distribution company owned by Frederic Ljung. He and Ljung renamed the company Moderne Methode and become co-owners along with Stanley Williams, a Florida-based doctor and investor.

Archambault's company has since made its mark in France as a product manufacturer and distributor, as well as a provider of workshops. In 2010, he and Ljung opened Béton Academy, a government-recognized training school, through which they began offering workshops. The school teaches students about a wide range of decorative concrete products and tools and has hosted a total of 68 hands-on workshops to date.

The humble-natured Archambault has found great satisfaction in teaching decorative flatwork and colored concrete techniques to installers around the world. His first teaching experiences were with Mexican crews in Texas, and he later educated workers in Europe, Africa and Asia through his consulting work for L. M. Scofield. Now, Archambault spends the majority of his time coaching three young men who work for him at Moderne Methode. His son, Jimmy, is following in his footsteps as a decorative concrete installer based in Bozeman, Mont.

Brad Bowman

When Brad Bowman passed away in 2000 at age 90, the decorative concrete industry lost a legend. Bowman, the inventor of stamped concrete and co-founder of Bomanite Corp., is often referred to as the "father" of the industry.

A native of Carmel, Calif., Bowman began his career constructing impressive exposed-aggregate concrete walls and slabs. In the late 1940s, he began experimenting with ways to add patterns to colored concrete flatwork in an efficient manner. First, he imprinted individual brick patterns onto concrete using wooden blades. Then, he developed the first platform concrete stamps that imprinted patterns of multiple units, such as bricks. He made these stamps first out of wood, then sheet metal, and finally cast aluminum.

Bowman's invention spurred an industry-wide interest in textured decorative concrete and allowed contractors to explore their own creative ideas to a greater extent. Many of his patterns, such as brick, cobblestone and fish scale, are still in widespread use today. After his initial invention, he continued to revitalize the concrete stamping process. For instance, instead of imprinting a stamp across an entire surface repetitively, he'd mix up stamps, depicting stones of various sizes to create a more natural look.

His original stamping process and tools were patented as the Bomanite process for coloring and imprinting decorative concrete surfaces, and in 1970, he formed Bomanite Corp. with three business partners. They began franchising contractors across the United States to install stamped concrete using his patented process. Bowman's partners later bought him out, and after working as a part-time consultant for the company for several years, he cut his ties completely and retired to southern Utah, where he lived on a 160-acre ranch in the heart of the state's Red Rock Canyon Country.

Creativity surrounded Bowman in every phase of his life. His wide range of interests

included Asian cultures, fine cooking, geology and archeology, and he constantly tinkered with creative projects well into his 80s, despite his declining health. In 1998 at age 87, construction was completed on the Kiva Koffeehouse in Escalante, Utah, a restaurant, cabin and gift shop made mainly from logs, stone and glass that Bowman first conceptualized in 1990.

Bowman served as a valuable mentor and inspiration for other decorative concrete artisans, and his legacy lives on in the many stamped concrete projects that can be found around the globe. His daughter, Barrie Ence, and granddaughter, Sara, live on the ranch and run the family-owned Kiva Koffeehouse.

Clark Branum

Clark Branum is a 30-year veteran of decorative concrete installation as well as one of the industry's most phenomenal educators. He created valuable training programs for the Brickform brand and L. M. Scofield Co. and regularly shares his knowledge of decorative concrete as a lecturer and speaker.

Branum, 55, launched his career in the Seattle area, where he spent 24 years working as a flatwork finisher throughout the Northwest and in Alaska. During his time as Brickform technical director, he developed and conducted the company's distributor and contractor training programs in the United States and abroad. He went on to develop L. M. Scofield Co.'s ground and polished concrete training programs.

Currently, Branum is the UltraFlor program manager and trainer for Diamatic USA, a lecturer for the Concrete Industry Management Program at California State University, Chico, a regular World of Concrete show speaker and a participant in the World of Concrete's Artistry in Concrete demonstration selection committee.

He also serves on the boards of directors for the American Society of Concrete Contractors Decorative Concrete Council as well as on Hanley Wood's World of Concrete Education Advisory Committee. Additionally, Branum is a member of the American Concrete Institute and serves on two ACI committees: 601-D Certification Committee for Decorative Concrete Finishers and C-310 Design and Construction Practices for Decorative Concrete.

Throughout his career, Branum has worked on notable international decorative concrete installation projects, including Hong Kong Disneyland and The Venetian Macao in Macau, China. As a constant exhibitor of intelligence, enthusiasm and professionalism, he has served as a mentor and inspiration for many aspiring decorative concrete artisans.

Joe Nasvik

Joe Nasvik comes from a family of concrete constructors and has made many contributions to the decorative concrete industry as an installer, business owner, writer and editor. Led by his strong desire to learn, he signed on as a Bomanite franchise owner in 1974 in Chicago, where he pioneered a number of innovative concepts.

With help from petrographer Bernie Erlin, of The Erlin Co., in Latrobe, Pa., Nasvik learned how to manage freeze-thaw problems in stamped concrete surfaces. He was the first to use retarding agents to set up a process that allowed workers to stamp larger surface areas per day — a practice that's now in common use and is referred to as step retardation. Experimentation with admixtures played a key role in his projects as well. When superplasticizers first became available, he used them to reduce the water-cement ratio of his mixes to produce more durable concrete.

Nasvik took his marketing efforts a step ahead of his competition while working as a Bomanite contractor. He and business partner Jeanne Fields launched full-fledged marketing programs targeting architects, engineers and landscape architects, which was an unusual move for a decorative concrete contractor at the time.

In 2000, Nasvik began his tenure at Concrete Construction magazine, where he now serves as senior editor. Through his informational articles, he teaches other contractors how to solve problems, understand their industry better and hopefully become more financially successful.

Nasvik is also the man behind Concrete Construction magazine's Artistry in Decorative Concrete exhibition, a staple of the World of Concrete trade show that allows artisans to demonstrate their techniques. Additionally, he's served as a valuable asset to the American Concrete Institute for his contributions to the architectural guidelines for decorative concrete, which the institute expects to publish this year.

Nasvik's success can be attributed not only to his technical skills in decorative concrete installation, but to his natural ability to develop fruitful relationships with other professionals in the industry. His willingness to learn has never waned, and he continues to improve the quality of work produced in the industry by sharing his vast knowledge with others.

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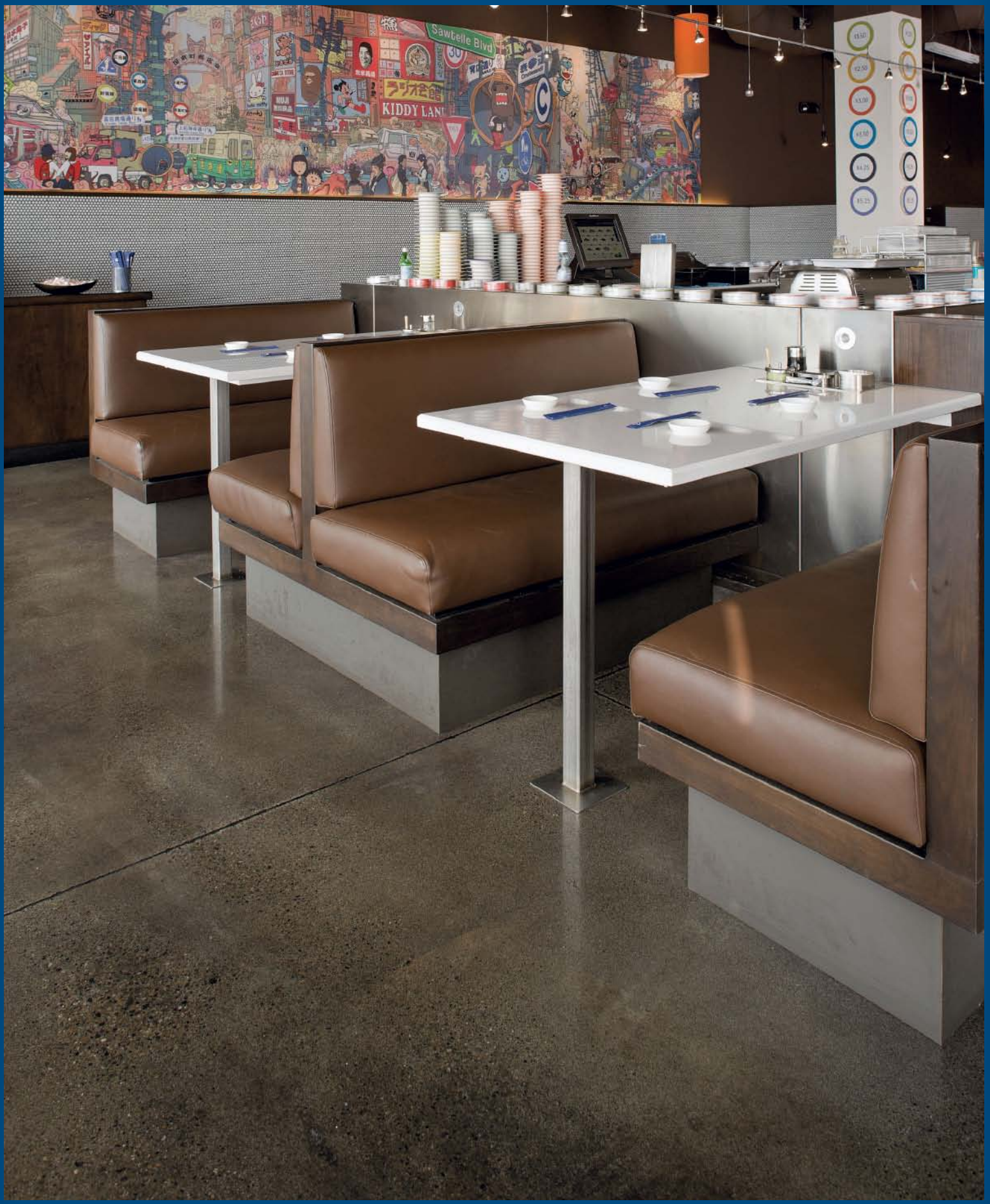


Photos courtesy of Diacon Decorative Polished Concrete

Adrian C. Henry, Diacon Decorative Polished Concrete

Manteca, Calif.

by Kelly O'Brien

Although Diacon Decorative Polished Concrete is only six years old, polishing contractor Adrian C. Henry's years of experience, not to mention his infectious enthusiasm for both installing and teaching polished concrete, have made him something of a rising star in the polishing world.

Henry, 36, is vice president of operations and co-owner of Diacon, based in Manteca, Calif. "There's something about taking a gray slab of concrete and transforming it into whatever the client is imagining," he says. "That's what motivates me."

Henry came to Diacon five years ago after spending the previous eight working as a consultant for polishing companies, as well as on-staff at national flooring company QuestMark Flooring and Seattle-based Concrete Restoration Inc. Diacon was brand new, not three projects under its belt, and its co-owners, CFO Robert DeFraia and sales and marketing VP Jonathan Williams, were new to concrete and in the market for a decorative expert. Henry had experience growing polishing divisions at larger companies, and he says he was "intrigued by the idea of going to a smaller company and generating the same buzz, getting them on board with what it took."

Now, five years in, generating buzz in the design community and getting the polishing industry on board with what it takes to do consistent, high-quality work are goals that Diacon and its three owners take very seriously. "We try to see ourselves not only as an installer but as an educational company for others, too," says DeFraia, 36. Williams, 37, is currently on leave from Diacon's day-to-day, but both DeFraia and Henry spend a lot of their time — with their clients, as well as at industry events and training seminars — working to educate people on the potential of polishing. "We do work with our competitors closely too," says DeFraia. "We spend a lot of time helping each other out, and that makes for a better product."

Of course, the other way Diacon generates buzz for the polishing industry is by putting down a ton of quality polished concrete. In addition to its main California office, Diacon maintains a branch in Seattle and recently acquired a third in Dallas, Texas. With a total staff of about 25, they

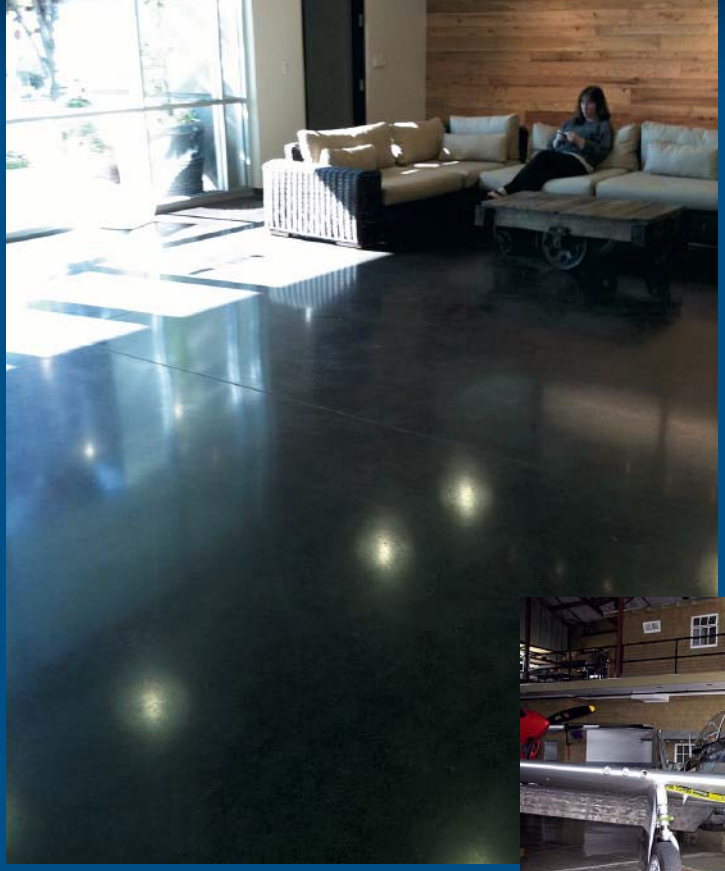
average 50 projects a year, and for every single one of those, Henry takes responsibility for making they get the job done right. "He's the guy who makes sure, every day, that the work that we do comes out quality," says DeFraia. And indeed, when DeFraia and Williams brought Henry on as their decorative expert, that's just what they were hoping for.

For his first job with Diacon, Henry drove down from Seattle to the job site at the California Academy of Sciences, in San Francisco. Henry's philosophy, especially when on the road, is: "When you roll in, it's dark. When you roll out, it's dark." Upon his 6:30 a.m. arrival at the job site, he was perturbed to discover that he had it to himself. When DeFraia and Williams joined him (considerably later), Henry told them exactly what he could offer them. "You need to have an operations guy," he said, "someone who's familiar with what it takes to maneuver throughout your day but still be profitable."

Under Henry's direction, the Diacon motto has become, essentially, never surrender. "We do not throw our hands up," he says. "We will not stop until we give our clients what they want." While that conviction has certainly been put to the test more than once, Henry is an expert at rising to challenges.

Take the supermarket project where they discovered that substrate under the tiles they were removing was half gray and half crimson, thanks to a shake-on hardener they hadn't known about. After a quick consult with the client, Henry mixed together a couple of AmeriPolish dyes and colored the gray sections to match the existing red. He was able to get his team back on the job without missing a beat.

Or the project where they were staining and polishing concrete floor panels that, for some reason, wouldn't consistently take the soy-based stains they were using. Working with the GC, the architect, and eventually



the panel manufacturer, Henry eventually discovered that the panels had been bleached by the water used during the fabrication process. By working with Smith Paints to find a color of their water-based stains that matched the project specifications, Henry came up with an application that wasn't affected by the bleaching and gave the final floor a consistent look.

One of their largest recent projects was for a manufacturing facility that required matching the finish on each of dozens of slabs, as well as making each of the joints look smooth and consistent. Although Henry and his team worked through those challenges, the project hit them with one last obstacle that was more difficult to overcome. The client was Solyndra, the solar power company that went famously belly up, and it reneged on its contract with Diacon. "We lost a bunch of money with Solyndra," says Henry. "And when you talk about a company that's five years old, that money could've done wonders."

Whether the job-site challenges are technical or financial in nature, though, Henry is ready to meet them. "He's always 100 percent ready to go on any challenge," says DeFraia. "So if we have a complicated job, he's the first one who wants to get us out there and get our name on it."

And Henry wouldn't have it any other way. "If you continue to do same thing day in, day out, you're bound to get nothing but better," he says, "and our goal is to be best installers in the industry."

www.diaconsystem.com

Adrian C. Henry will present "Polished Concrete 101" and "Fundamentals of Polishing Concrete" at the 2012 Concrete Decor Show. For more, go to ConcreteDecorShow.com.

SAY Sí Front Entrance

Work by: Volunteers, various cities

by Emily Dixon

In preparation for the 2012 Concrete Decor Show in San Antonio, Texas, show coordinators, manufacturers, contractors, trainers and distributors met last September to brainstorm ideas for hands-on workshop possibilities.

While touring the headquarters of SAY Sí, an award-winning nonprofit youth arts organization where the workshops are to be held, Trevor Foster, regional sales manager and principal trainer for Miracote Products, and Keith Boudart, sales and marketing manager at Butterfield Color, realized there was potential for overhauling the building's front entrance. However, there was more work to be done than could fit into a 16-hour workshop. To give the space the elaborate design they had in mind, they took on the project ahead of the show.

Foster, Boudart, and SAY Sí executive director Jon Hinojosa collaborated to finalize the design concept, using San Antonio's Riverwalk as an inspiration. A stamped overlay was to be applied over most of the surface area with varying earth-tone colors and textures, and a troweled microtopping representing the San Antonio River flows from the building to a garden area below.

Photos courtesy of Bill Young

SAN ANTONIO DECORATIVE CONCRETE

In order to complete the nearly 2,000 square feet of surface area in just one week, workers from Butterfield and Miracote teamed up with local contractors to take on the massive overhaul. After losing an unexpected day to additional surface prep, the crew had to put in 12- to 15-hour days to meet their deadline.

"Typically this would have taken three weeks, but we had a stampable overlay going in, and then we were doing something else while it was wet," said Foster, noting the crew had to literally walk on handrails and pull some other acrobatic tricks to avoid the wet topping. "We laid out about 90 bags of stamped overlay in about an hour."

"Pretty much everybody gathered around and worked together to get done whatever needed to be done," says Boudart. "We kind of divided and conquered."

Once the overlay was dry, it was the SAY Sí students' turn. On either side of the river, they were given the opportunity to paint flora and fauna native to Texas as well as put down quotes that reflect their experiences with the youth arts organization.

"They had some trepidation and nervousness because it's so public and permanent," says Tommy Hopkins, the visual arts director at SAY Sí. But once they got started, the students settled in, he says. "We had 20 students on the ground at once, all working together in collaboration. Even alumni who happened to be in town jumped in and helped. It was a really great creative event."

Look for more stories about San Antonio decorative concrete throughout this issue.

Credit where credit is due

Also helping on this project were several decorative concrete artisans and experts, mostly from Texas: **Ramiro Chavez** and **Alejandro Lopez** of All Ready Services, **Eric Hamlin** of The Stain Store, **Shane Johnston** of Stain and Stamp Inc., **David Larson** of Advanced Concrete Staining, **Tody Rodriquez** of Precision Decorative Concrete, **Courtney Stoll** of Texas Shot Blast, **Jeremiah Tyler** of Incredible Concrete Floors, **Dennis Wagner** of Precision Concrete Staining and Engraving, and **Bill Young** of Concept Art & Design.

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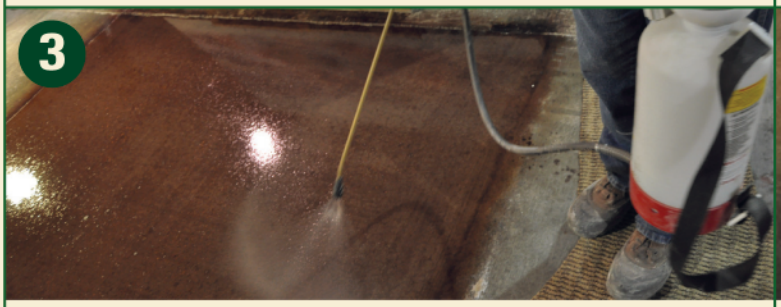

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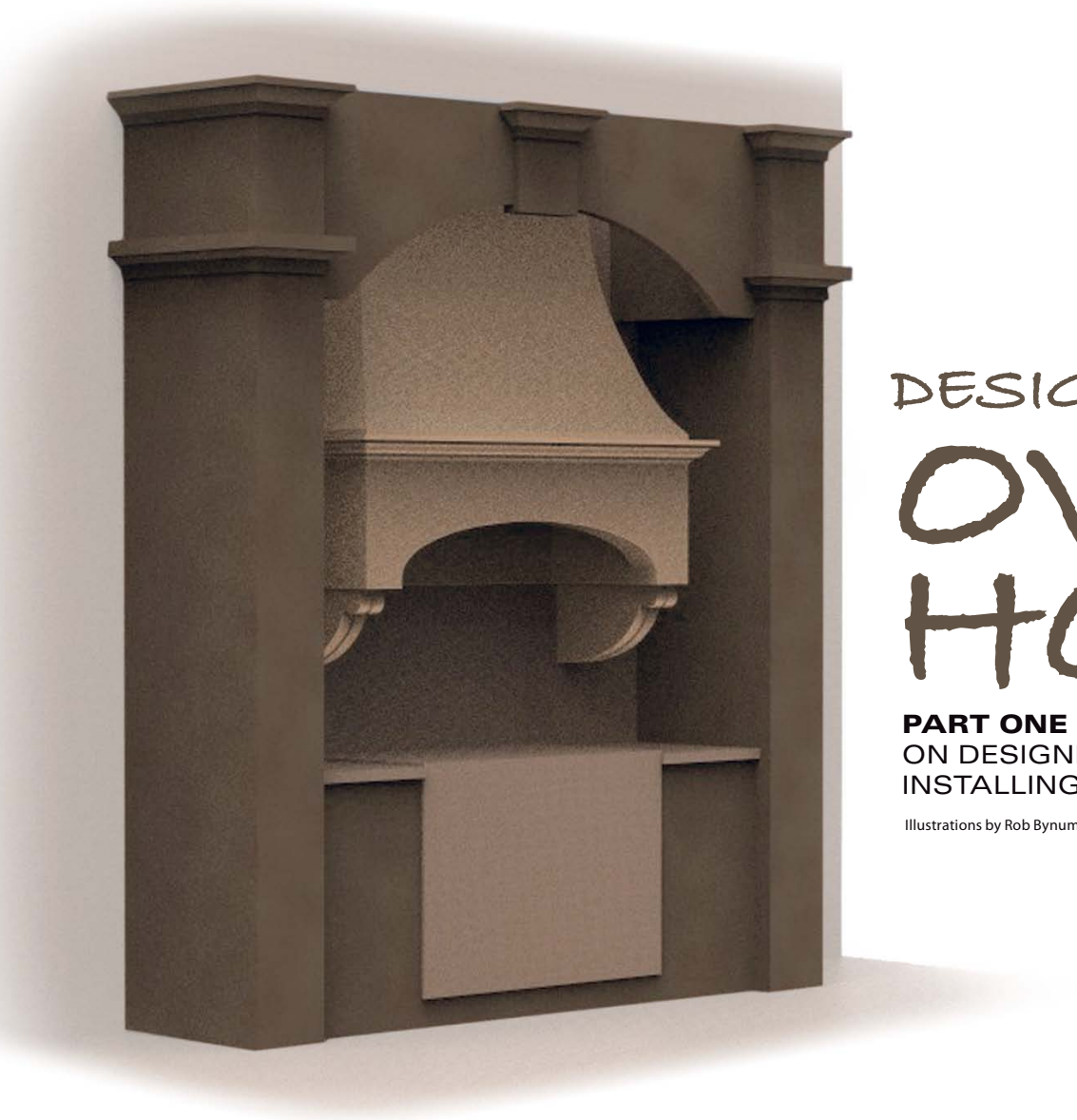


DESIGNING AN OVEN HOOD

PART ONE OF A TWO-PART SERIES ON DESIGNING, CASTING AND INSTALLING CONCRETE OVEN HOODS

Illustrations by Rob Bynum

how TO

by Jeff Kudrick

DECORATIVE concrete precasters have the ability to make a greater variety of products from their one primary material than their stone or solid-surface fabricator counterparts do. The malleability and strength of cementitious composites benefit the cottage manufacturer, allowing them to retain the ability to form infinite custom or semicustom products.

Let's consider one example here. Rather than the utilitarian mainstay of most interior precast manufacturers, the countertop, we will instead discuss how to design, engineer, fabricate and install a concrete stove hood.

Featured Artisan:
Jeff Kudrick
Randolph, N.J.
www.infinicrete.com

1 IDENTIFYING THE BASIC COMPONENTS

The drawing at right (Figure 1) shows the basic components the hood will be designed with.

The moldings (1) are simply transitional components. They can be of varying height and dimensions. They allow for easy fabrication and install.

These moldings can be made using rubber molds that are three pieces — one 8-foot-long run that is square at both ends and two 44-inch long returns that are coped to allow for seamless transitions of the cast material and limitless movement to accomodate any dimension. These are available through Surecrete Design Products or Infinicrete (the company I do product development for), or they can be made in-house with either rubber or PVC.

The largest component is the breast (2). It covers the top of the interior ventilation components and the ductwork. The duct in many areas of the country needs to be rigid, so scheduling the ducts to be installed by another contractor at the same time the hood is being installed is helpful. The ventilation unit would be set by the cabinet-maker, contractor or ventilation technician after the header was installed, and the duct, if it is rigid, would get installed before the breast.

The breast component is best cast and installed as one piece to give the part full integrity. If the look of separate blocks for the breast is desired, maintain a single structural component and grind the joint lines into the breast.

The next and most intricate component is the header (3). This header is the most important component structurally and contains the ventilation components. It is imperative that all considerations and quality fabrication standards are met when casting it. If columns support the header, the weight of the hood rests on the counters and not the header, in which case the header is more stable and does not require cables for support.

The lowermost component in a full wall mount hood design are the brackets (4), which are strictly decorative. Unlike columns, which carry the load of the overall hood to the countertops, the brackets are best suited for a visual and decorative component. These brackets are set with an adhesive and held in place with masonry screws from the inside of the header, plus drywall screws from below the bracket.

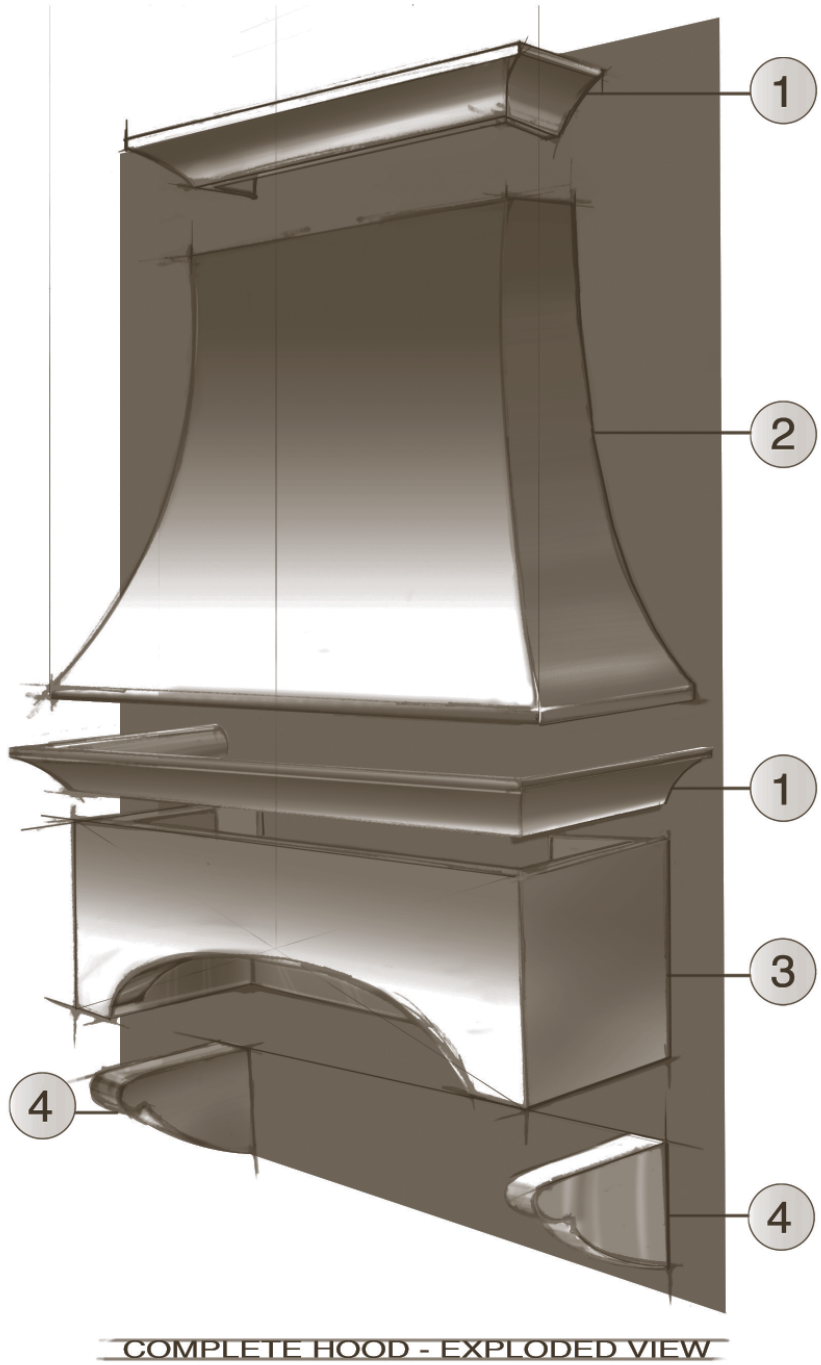


Figure 1

2 DESIGNING THE VENTILATION SHAFT AND CHOOSING A UNIT

We have now identified the modular components in a precast hood design and their relative positions. We can start the design process.

The first step in designing a hood is the ventilation unit. The outline can be specified by you, or you can follow the direction of a designer or architect. However, when making products to fit other materials or components, you should understand the basic requirements of said components so that you can serve your clients better and be a knowledgeable resource who can solve problems.

The ventilation unit will be installed, typically, by a suitable contractor who is licensed and insured for this type of work. The flat panel that supports the vent unit is typically provided by and installed with the vent unit by the contractor, although it can also be made out of concrete. It is your job to make the pieces and install them, not to be a jack of all trades. However, this does not nullify your need to understand and educate yourself about the ventilation unit's installation so you can build products that are user-friendly for the people that specify and install them. Making their jobs easier gets you more work.

When selecting a ventilation unit there are a few basic concerns. The most apparent is the cubic feet per minute (CFM) of air the unit will suck when pulling smoke and grease from the stovetop. The recommended volume is 100 CFM per 10,000 British thermal units (BTU). So a 20,000-BTU burner needs a 200-CFM ventilation unit.

The room size is also a consideration. Think about a room that is 8 feet wide by 10 feet long by 8 feet high, which equals 640 cubic feet of air. The fan will have to move all that air at least 15 times in an hour, so multiply the amount of air (640 cubic feet) by 15 to get a total of 9,600 cubic feet of air moved per hour. CFM is measured in minutes, so divide 9,600 by 60. Your starting point for the range hood's power is 160 CFM.

Finally measure the stale air in the duct that the range hood will have to overcome. Use values from the Duct Length Adjustment Table (at right, on the facing page) to adjust your measurements for true duct length and figure the CFM needed for your duct.

In our example, we have a simple duct run that is 4 feet of 6-inch straight pipe, a 90-degree elbow, a run of 3 feet of straight pipe and a cap. Adjusted, this becomes: 7 feet of straight pipe, plus 20 feet for the elbow, plus 40 feet for the cap, totaling 67 feet, which translates into 67 CFM.

Add that result to our total CFM (360 CFM plus 67 CFM) to get a calculated CFM rating for your range hood of 427 CFM. In order to be compliant, you would need to install a fan in the range hood that has a rating of at least 430 CFM or greater. (Note: The duct length can be affected by the location of the fan.)

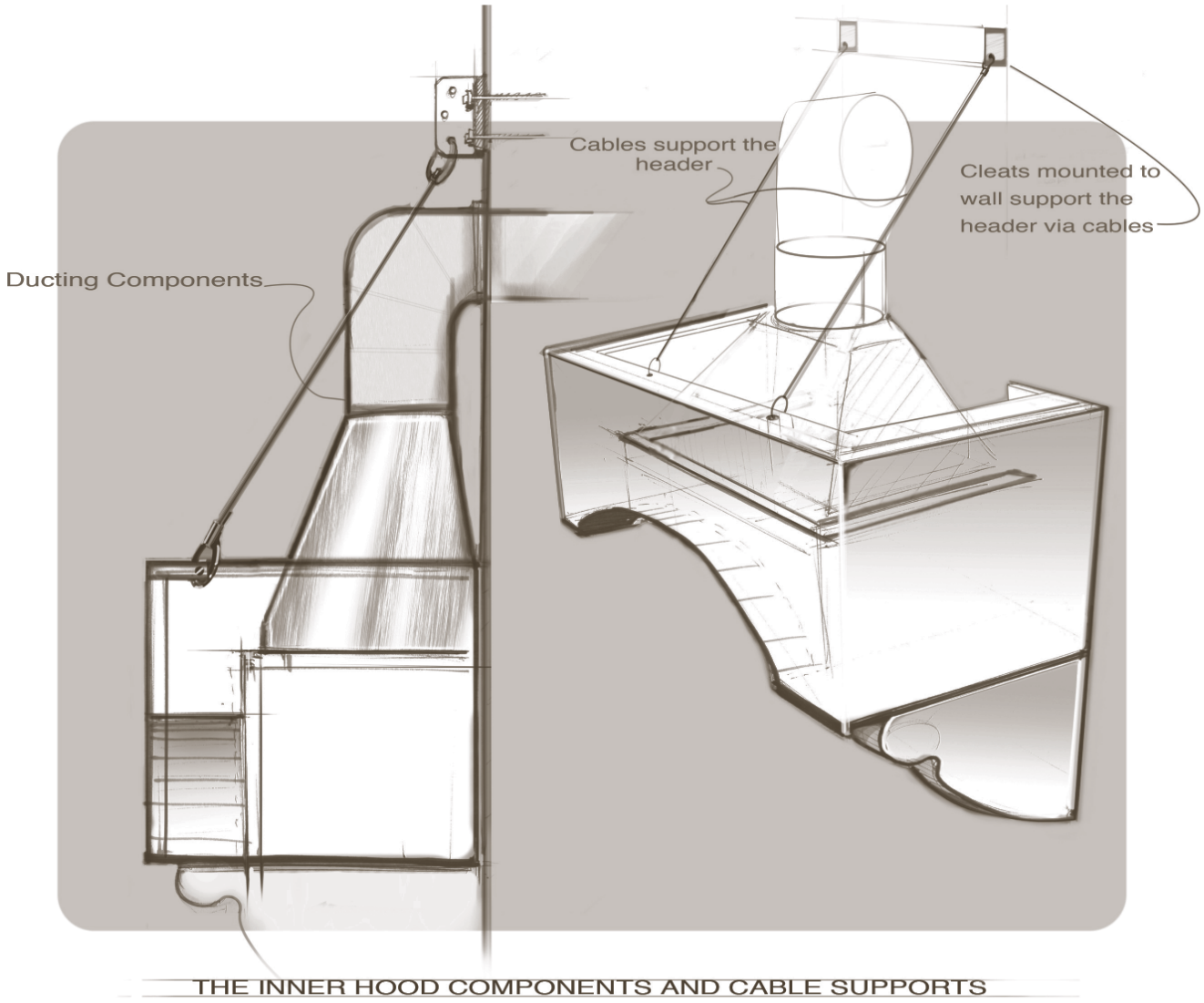


Figure 2

DUCT LENGTH ADJUSTMENT TABLE

Smooth metal duct:
Actual duct length x 1

Flex aluminum duct:
Actual duct length x 1.25 (for 4-inch-wide duct)
Actual duct length x 1.50 (for 6-inch-wide duct)

Insulated flex duct:
Actual duct length x 1.50 (for 4-inch-wide duct)
Actual duct length x 2.00 (for 6-inch-wide duct)

Wall caps and roof caps:
30 feet for each cap (for 4-inch-wide duct)
40 feet for each cap (for 6-inch-wide duct)

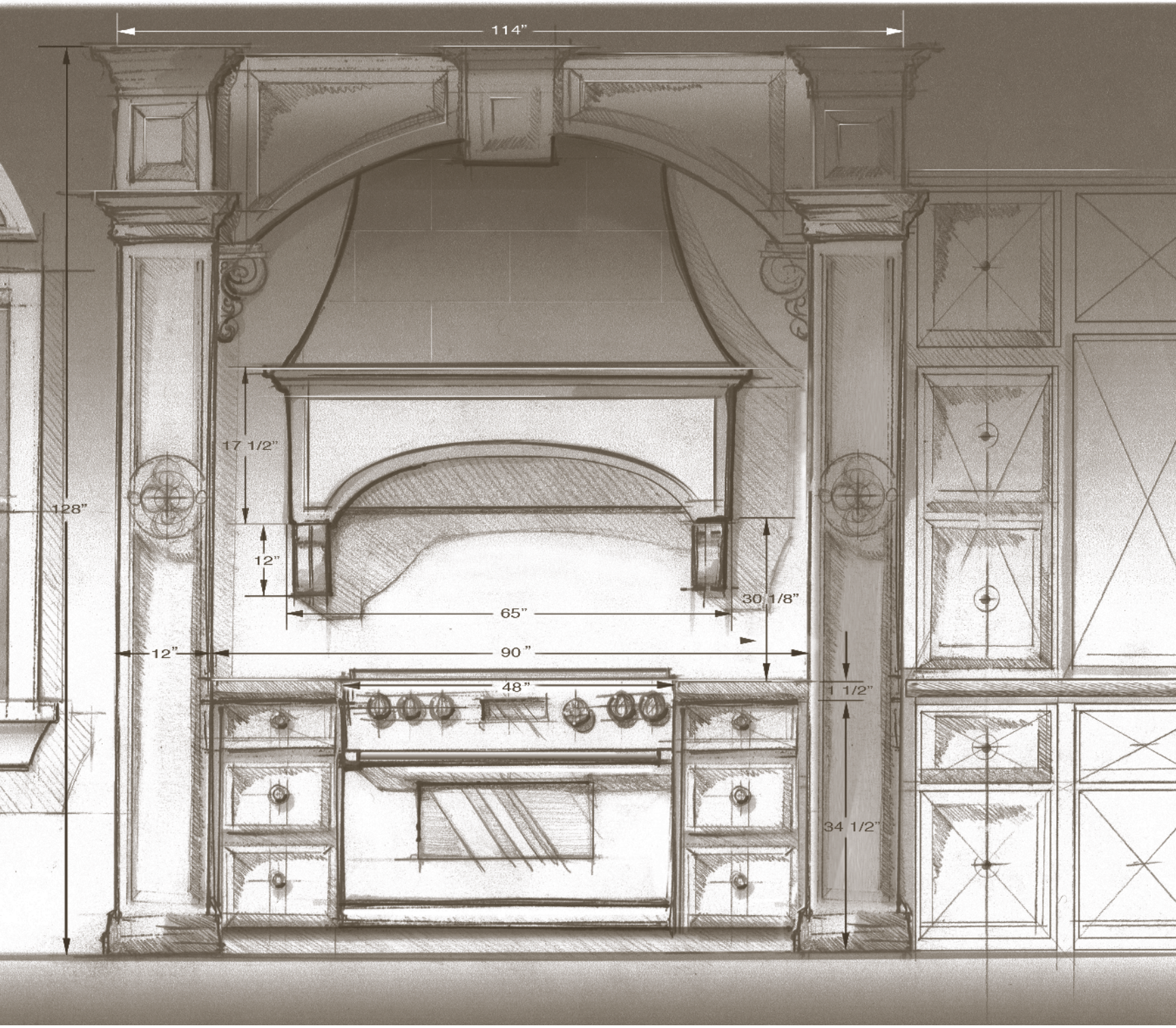
Elbows and turns:
15 feet for each (for 4-inch-wide duct)
20 feet for each (for 6-inch-wide duct)

The hood design allows for a large enough space for most sufficient units. However, oversizing allows for a quieter installation and more productive evacuation of the smoke. An in-line or remote fan unit can be set up separately from the ventilation housing. This housing would contain the stainless hood shroud that would have the controls and the filters. The fan can then be in a separate location, allowing for a unit that moves more CFM and operates more quietly.

Many units do not move the specified amount of air volume, since there are no standards for testing the actual volume of air moved in the final installation.

The capture area of the vent unit is the space that is directly below the vent. The brow of the header is below the space where the vent is set, so the capture space above it inside the filter area allows smoke to be contained until it is vented. The ventilation unit will sit on a piece of trim, either a slab of GFRC with the desired cut-out or a Formica-laminated plywood board. The board typically is finished with a metallic laminate.

Now that you have selected your ventilation unit and have a specified size that you have to allow for, you can design your hood. You should also figure out how the vent will run and sketch it in a drawing (Figure 2).



3 SKETCH YOUR HOOD AND ITS DIMENSIONS

By starting with the unit at the desired height and the vent exit through the ceiling or wall, you can sketch your hood around the components. Be sure to locate the cabinets in the drawing as well.

Once the hood is sketched and rough dimensions are figured, you are ready to make your shop drawings for fabrication.

4 BREAK THE HOOD DOWN FOR CASTING ITS PARTS

Now, sketch a 3-D map of the different parts you will cast and assemble for your hood.

The main component, the header, should be fabricated in one piece and allow for bolting into blocking as well as reinforcement embeds for cabling. Enough clearance should be allowed for the lay-up of material.

Your molds may be "multifaceted." This means the mold comes apart for spraying the face mix and is reassembled so that the entire part is monolithic and strong enough to support itself and the other components.

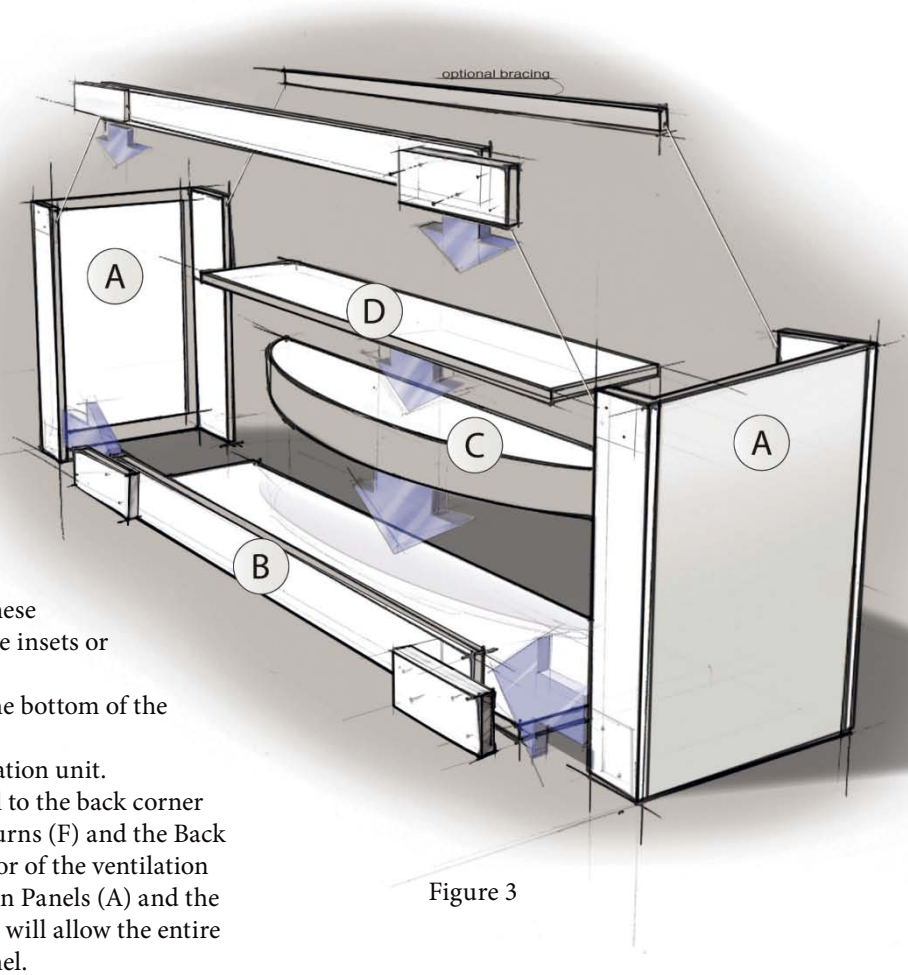


Figure 3

Figures 3 and 4 shows how your pieces fit together.

The Return Panels (A) connect to the Header Face (B). These mold panels are independent so that if the Return Panels have insets or raised reliefs you can demold without damage.

The Brow Knockout (C) sets the arc or relative shape of the bottom of the Header. This attaches to the Header Face and is removable.

The Header Return Panel (D) sets the height of the ventilation unit.

The back corners of the Figure 3 drawing will be identical to the back corner of the cast header pictured in Figure 4. The Side Interior Returns (F) and the Back Interior Return Panel (E) are collapsible and finish the interior of the ventilation unit's captive area. The back of the header between the Return Panels (A) and the Side Interior Returns (F) will have a foam support insert that will allow the entire back of the header to be a monolithic, fully finished back panel.

Figure 4

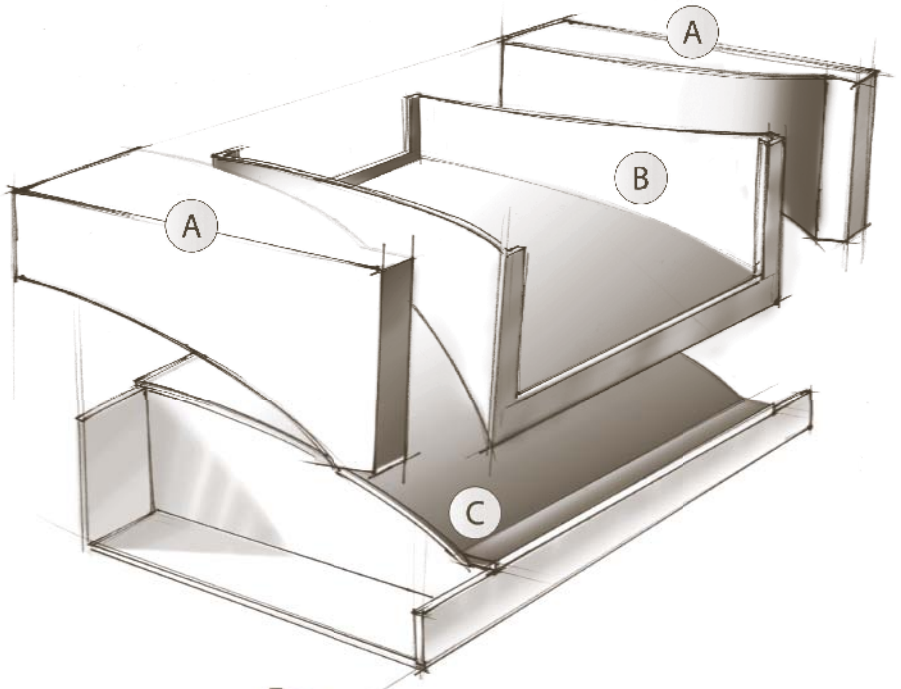
Again, Figure 4 shows the back corner of the cast header. (G) is the small panel that is created by inserting the foam to cast the monolithic back panel. The whole back is cast with scrim in two layers connecting Return Panels (A) and (E) the Back Return Panel. The 4-inch return on top of the Header Face (B) is reinforced with scrim. and rebar is embedded in the first 1 1/2 inches of the Header Face return. The rebar can be a lighter, thinner and better-suited bar of basalt rebar (sold by Surecrete Design Products).

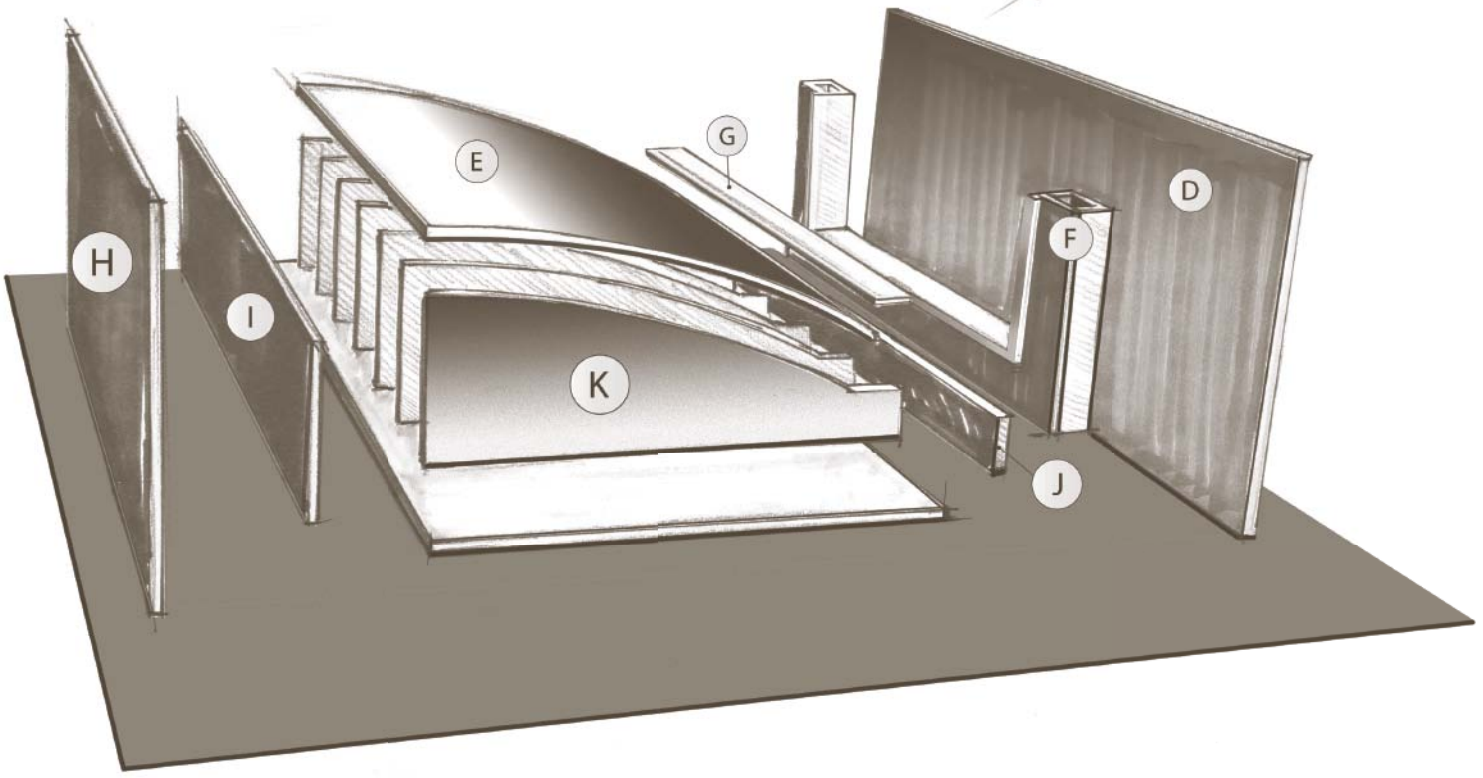
The top of the mold face of Header Return Panel (D) (the piece in Figure 3 that sets the height of the ventilation unit) allows the cement to be finished to the edge of it as well as parts (E) and (F).

5 THE BREAST MOLD

These two diagrams show the breast mold (right) and an exploded view of the mold (below). The Breast Face Mold (C) can be formed with wiggle board or ribbed plywood and faced with Formica. Using this technique you can make a form that is reusable and modular for the breast. The mold allows for breasts of different widths to be fabricated, and the lower 4-inch extension allows for height adjustments.

At right, the Breast Mold is accompanied by two Breast Return Molds (A). There's a finished Breast (B) in the drawing too.



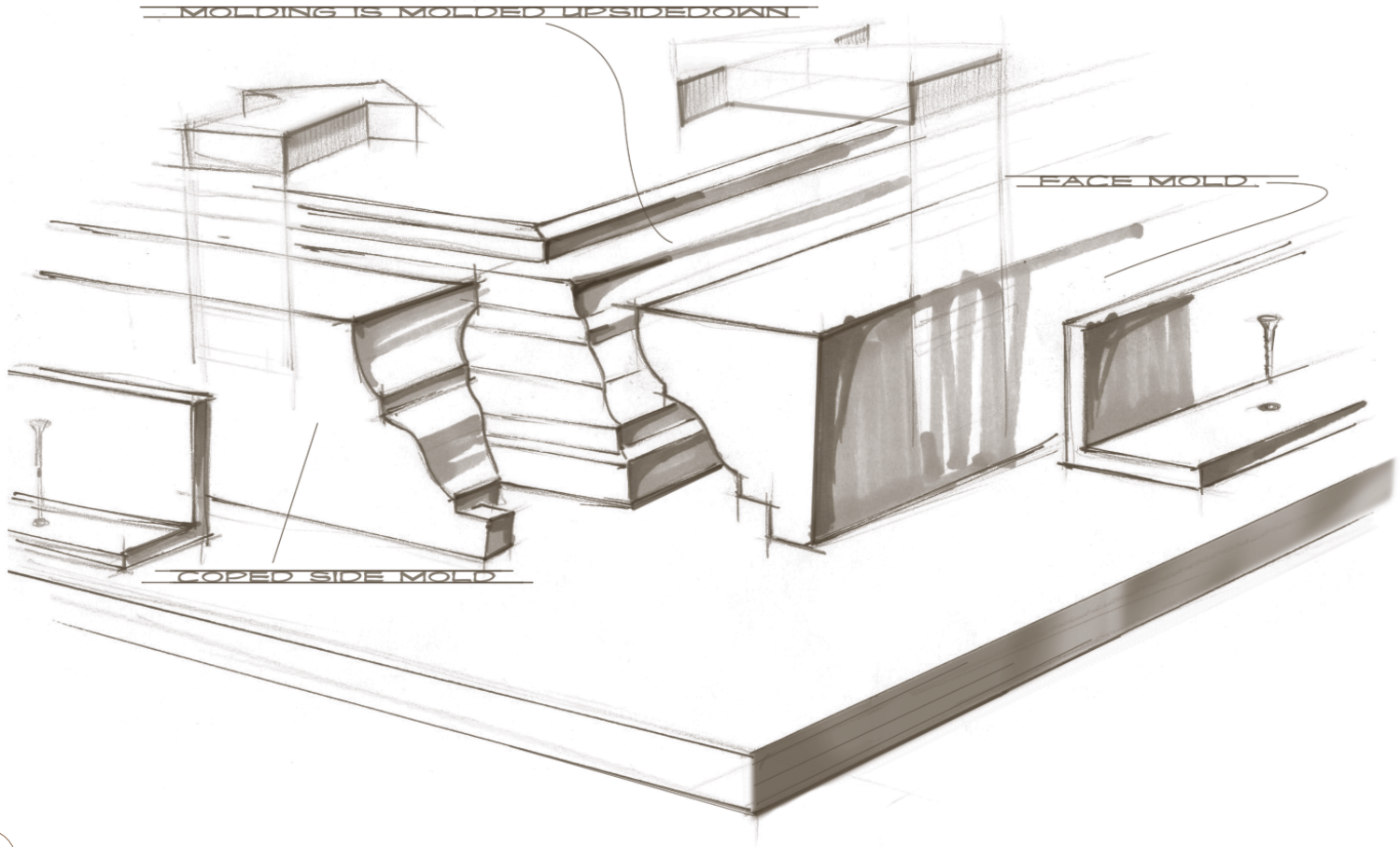


BREAST MOLD - FACE EXPLODED VIEW

The breast mold in the Face Exploded View above starts with the Breast Mold Base Board (M). This is the base upon which you will make your reusable breast mold. The Breast Mold Rib Patterns (K) add reinforcement for the Mold Base Board in the breast's height dimension and create the shape of the breast. Save the original pattern so that it may be used to make ribs for the breast return molds, which you may or may not choose to make the same.

The Breast Mold Bottom Rail (J) and the Breast Mold Top Rail (I) are used to reinforce the Base Board along its length, hold the Rib Patterns square, and create a platform in which to screw the Breast Base Plate (D) and the Breast Top Plate (H). Both of these components have two features, one to hold the Breast Return Molds (A) in place and secure, and may be used as the mold surface to cast upon.

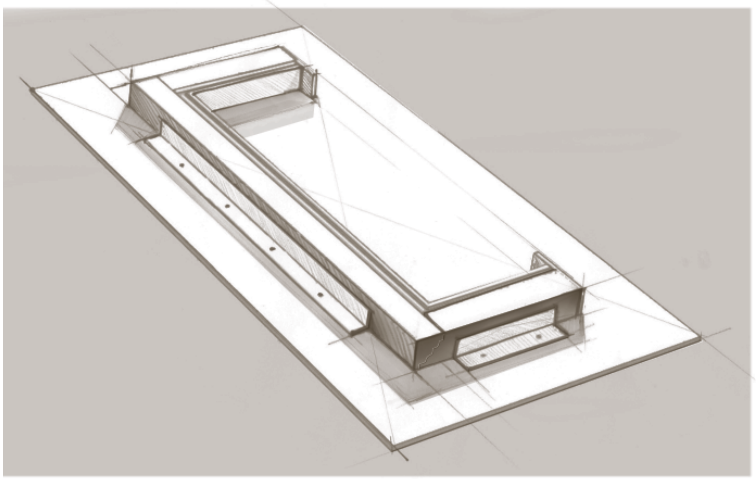
The Breast Base Filler Plate (F) is made of foam or other filler. It is strictly used to adjust the height of the overall piece and may or may noy be necessary in your design. The Breast Mold Transition Face (G) extends the base of the breast so height accommodations can be made. It also creates a perpendicular transition to the lower molding on which it will rest. (Remember figure 1.)



6 THE CROWN MOLDING

The transitional component is the crown molding. It is a separate part that allows you to offer another decorative component without making molds more complex. It also gives you the ability to offer varying details while keeping the whole system consistent. The molds can be made from PVC or rubber or bought from Infincrete.

The molds are coped into each other and the longest center mold stays stationary. This allows for any width and depth needed. This part is hand-finished on the inside face and cored with foam so it is lightweight. Aluminum angles make the positioning of the molds to the baseboard square and easily set.



OVERVIEW OF MOLD FOR THE MOLDINGS

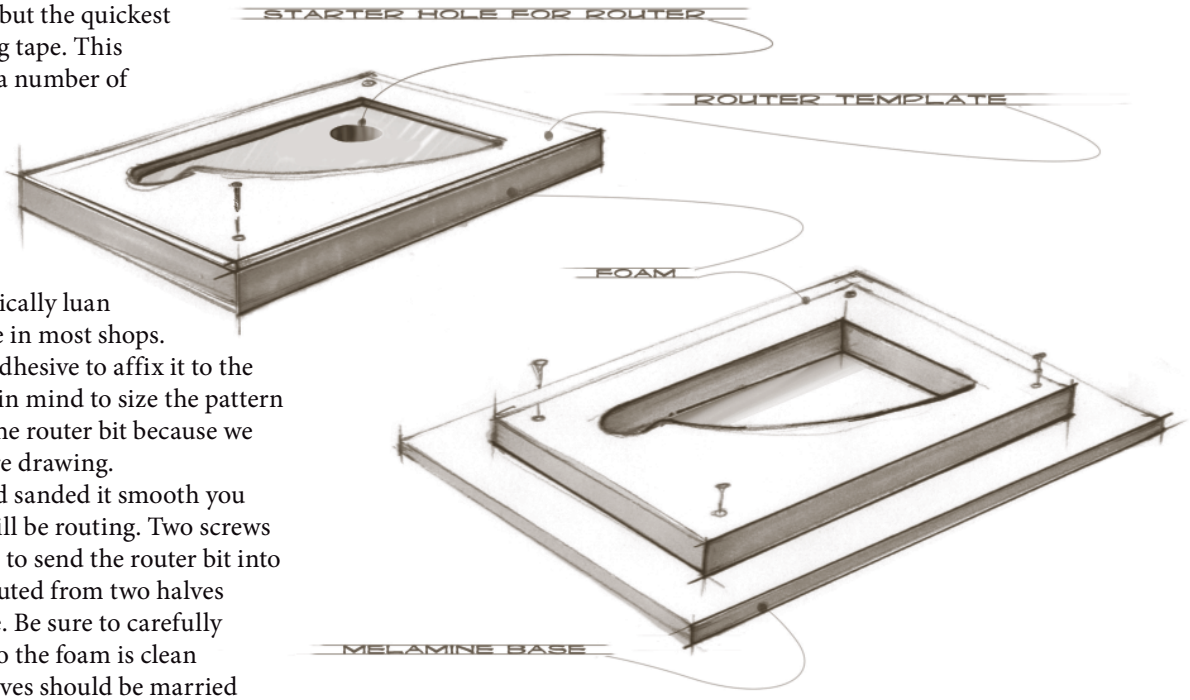
7 THE DECORATIVE BRACKETS

Now that the main component molds are done, it's time to tackle the decorative brackets. They can be fabricated in a number of ways, but the quickest is foam, a pattern, router and facing tape. This technique can be used to fabricate a number of shapes and useful items.

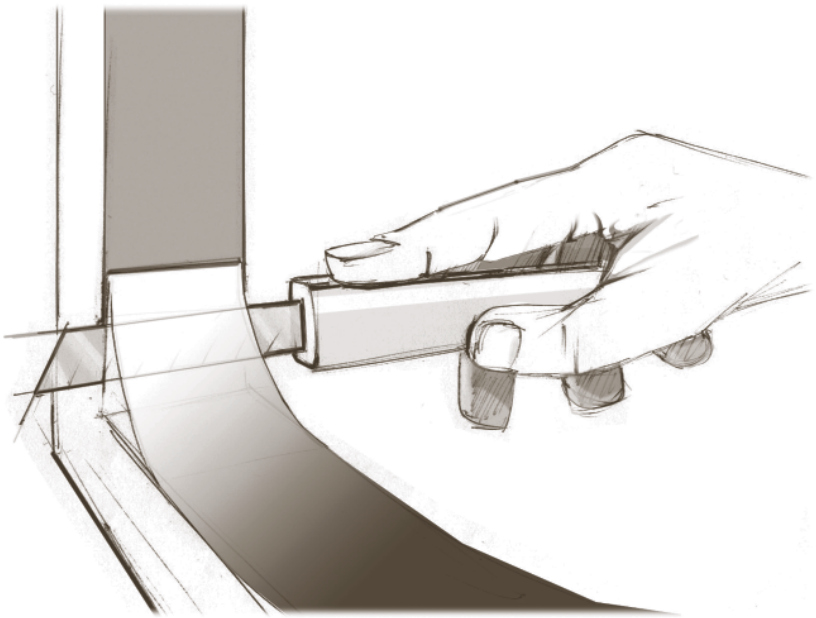
Say we want a bracket that is 4 inches wide — then, we are going to cast two 2-inch-wide halves. You start by drawing the shape of the bracket on paper or directly on a piece of 1/4-inch material, typically luan plywood since it is readily available in most shops. If you draw on paper, use contact adhesive to affix it to the pattern plywood. Either way, keep in mind to size the pattern to accommodate the thickness of the router bit because we want the outside of the shape we are drawing.

After you have cut a pattern and sanded it smooth you need to fasten it to the foam you will be routing. Two screws will hold it sufficiently. Drill a hole to send the router bit into the foam block. The part can be routed from two halves and assembled with the facing tape. Be sure to carefully rout around the plywood pattern so the foam is clean and smooth. The two opposing halves should be married together to be sure the two cast halves will fit seamlessly when finished. Use fine sandpaper to even out the foam molds if necessary. If you want square edges, they need to be carefully cut with a snap razor or its equivalent, because the router will leave its radius in the edge.

Apply 2-inch facing tape to the interior face of the mold to render a smooth, clean surface.



MAKING THE MOLD FOR THE CORBELS



This set of design and mold layout sequences is the first half of a two-part article. Many details will need to be filled in by the fabricator to allow for a comprehensive design. This information is fairly broad, and many steps are not laid out in elaborate detail.

Much of the skills and understanding necessary to complete this type of project are assumed, and this outline only offers an understanding of the overall process.

In the next issue of Concrete Decor, *Jeff Kudrick will lay out casting and embedding details for concrete hoods, as well as the installation procedures.*

Jeff Kudrick, product manager for J&M Lifestyles LLC, based in Randolph, N.J., is an award-winning creator of concrete kitchen and bath fixtures, fireplace surrounds, furniture and architectural details. For more about his systems, processes, custom-designed product molds or engineered concrete mixes, contact info@infinicrete.com.

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CARLTON'S CORNER

Getting an Early Start on a Profitable Spring

by Doug Carlton

For some in the decorative concrete industry, this spring can't come too early. The doldrums of winter take a toll not only on the pocketbook, but also on our creative juices as artists and promoters.

We all realize that the Christmas season does little to influence or encourage new construction improvement work. Nothing can be done about this, I'm sorry.

But we still have some very productive activity that we can engage in before spring starts in earnest.

It has been easy to overlook this in the last few years because our industry was so busy and so chaotic. Most treated early spring as if it was any other time of the year. My friends, those days are officially over.

Let's toss around a few ideas to kick 2012 off with a boom. Now is the time to capitalize on a profit season that only comes once a year.

There's something about the spring season, regardless of the recession, that inspires most of us to bring something fresh and new to our surroundings. The weather turns warmer (usually), days get longer, and before long potential clients begin to plan their next projects. After more than two decades of offering decorative concrete services, I can say that timing a spring promotion is crucial.

Let me explain my point here. About 10 years ago our company filmed a TV commercial using photos of completed outdoor decorative projects, with plans to air the commercial in early spring. I thought I would try to pull my local market into an earlier spring start by running the spot through February. (My typical spring demand starts in late March.)

It didn't work as planned, to say the least. We bought spots on the local TV station and sprinkled our 30-second commercial into slots from morning to prime time hoping to hit our market on the way to work or after. Nothing. If my memory serves me correctly we had a total of nine calls and zero closed sales at February's end. It felt like a total loss and money wasted — until March rolled around and our phone rang off the flipping hook.

People will use your services when they feel the time is right and not a minute before. That said, people will not use your services if they don't know what you offer or if they have forgotten you.

Here are two specific strategies we have used to kick off a spring season in high gear.

Reaching out to past customers

One of your best sources of new work is old customers. I often hear from other decorative contractors that the last couple of years have brought a decline in new business. I certainly won't argue this fact, at least for many regions. But the number of past customers you have rarely declines. Most are still around and most have forgotten about your talents and services — not all, but most. It is no longer good enough to hope past customers remember you. You must remind them somehow or someway.

Here is an example of what our company and others have found useful. Take one or two great, not good but great photos and create a postcard mailer or e-card. Yes, this takes time, but so does sitting around waiting for the phone to ring. Don't overload your postcard or e-card with overwhelming information. Put only what you want your past customers to know. Is it that you offer an outdoor reseal or maybe that it's time to rewax an interior floor? Maybe the card is nothing more than a great picture with your name and logo in one corner. The important thing is to remind

your past customers that you are still available if needed.

Offering something on sale

Name one person who doesn't like a bargain. Your clients are no different. Sometimes spring can be jump-started by nothing more than enticing customers with a discounted service of some kind. Remember, the goal is to create enthusiasm and promote your company's services as professional decorative concrete contractors. Keep it simple, keep it affordable and keep it up until new work is generated from your efforts. Don't be against extending a discount for those wanting to commit but not ready to move forward with their project. Take a deposit and exercise an agreement.

Often we contractors find ourselves unwilling to promote our work, and I'm not sure why that is. I encourage you to think outside the box if you decide to promote this spring by offering something on sale. Customers' mentalities have changed along with the declining values of their real estate. They are looking for discounted services, especially when they realize the work you do probably will not improve the value of their property like it once would. You have to change along with the market.

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

PRODUCT NEWS

Bosch adds diamond cup wheels

Bosch has introduced 4-inch, 4 1/2-inch, 5-inch and 7-inch diamond cup wheels. These new cups feature increased height that aids dust collection by helping them fit flush to the bottom of a hood.

The new Bosch diamond cup wheels are offered in two styles: A double-row design for faster, more aggressive removal of high spots, plus longer life compared to single-row options, and a turbo cup wheel that creates a smooth concrete finish while delivering high material removal.

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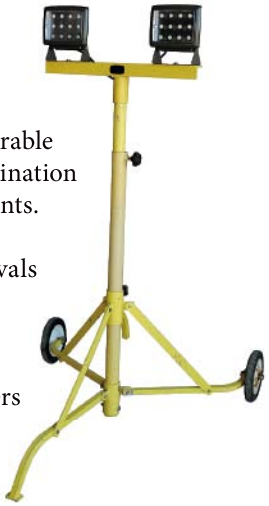
Light tower from Magnalight.com

Larson Electronics' Magnalight.com announced the release of the WAL-TP-2X6670 tripod-mounted light tower with HID fixtures. It provides high-power illumination in a versatile tripod-mounted package that works with a wide variety of power sources. It produces 12,600 lumens of light.

www.magnalight.com

New tripod offers dual LED lights

Larson Electronics' Magnalight.com has released the WALTP-2XWP400MCE Industrial LED Light Tripod, a rugged LED light tripod built to provide a reliable and durable source of powerful illumination for industrial environments. Designed with dual LED light heads, the tripod rivals metal halide tripods in total coverage and light quality, but runs cooler, uses less energy, and offers the long operational life and durability of LED technology.



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Introducing the Allen Power Buggy

Allen Engineering Co. has rebranded Miller Power Buggies as Allen Power Buggies. The Buggy name and color has changed, but the quality and features remain the same.

After the acquisition of the Miller Power Buggy line in 2010, AEC began manufacturing the buggies in their Paragould, Ark., factory.

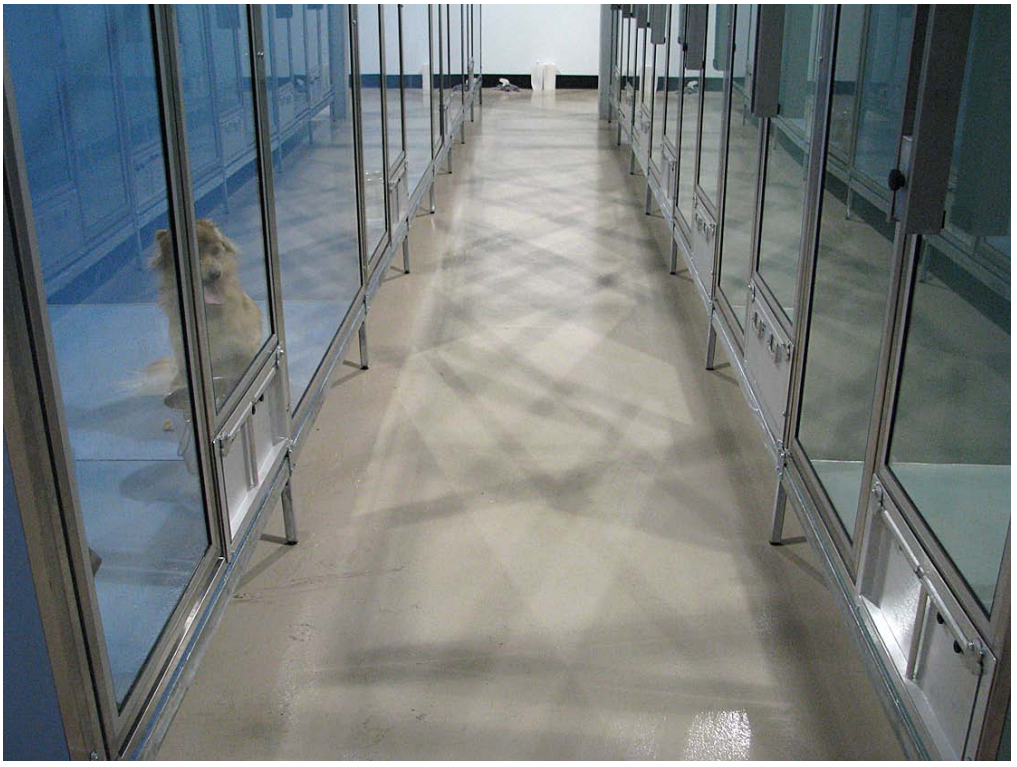
www.alleneng.com

Broadcasting Aggregate into Coatings for Safety and Beauty

by Trevor Foster, with Natasha Chilingerian

Many contractors are used to hearing this line from their clients: "I want a floor that's slip-resistant, but I also want it to be easy to clean." Broadcasting or mixing aggregate into resin or acrylic coatings is an easy way to satisfy this common request. Aggregate roughens up floors, giving them the consistency of sandpaper. Some aggregates add a layer of skid resistance without taking away from the effects of existing decorative applications, and others have decorative qualities of their own.

Since liability is a concern in workplaces, aggregate broadcasting is a common application for floors in restaurants, schools and hospitals. In places where skid resistance is crucial but aesthetics are not, such as distribution centers and manufacturing plants, heavy-duty aggregates can provide a high level of strength and durability. In residences, broadcast aggregates can be beneficial on garage floors and pool decks.



Photos courtesy of Crossfield Products Corp.

A thin film of epoxy spiked with broadcast sand is a surface that is both slip-resistant and low in cost.

The physical process of broadcasting aggregate into coatings is straightforward and leaves little room for error. The key to a successful aggregate broadcasting job is in the preparation: knowing the unique qualities of each type of aggregate and how to choose the perfect aggregate variety for the job at hand.

Six types of aggregate

There are six primary types of aggregate that can be used with coatings: silica sand, aluminum oxide, colored quartz, glass beads, synthetic aggregate and flint silica. All aggregates come in a variety of sizes ranging from coarse to fine, but each type is accompanied by limitations in regards to application method, compatible coatings and maintenance.

For an industrial job where the floor's primary requirements are skid resistance and surface-quality longevity, your best bet is aluminum oxide. It's an extremely hard aggregate that does not get polished by wear and tear. Instead, it fractures in the face of intense abuse and maintains its angular, sharp profile.

Silica sand, on the other hand, is semiangular in shape, wears down after heavy contact and is typically applied in small amounts until the desired level of skid resistance is achieved.

Flint silica differs in that it's round and uniform in size, which leads to a slightly smoother result.

If aesthetics are just as important as skid resistance, colored quartz is the way to go. Available in about 30 colors, colored quartz

This floor features a double-broadcast quartz system. The client was looking for a decorative floor as well as a surface that was both impact- and slip-resistant.

can be applied in a single, uniform shade or in a combination of colors. To seal in color, manufacturers coat colored quartz pieces with epoxy or ceramic material. The ceramic coating absorbs more resin than the epoxy coating, so you'll need to use more resin if you're going to cast ceramic-coated colored quartz into it.

Glass beads and synthetic aggregates are the least invasive types of aggregate that still produce some level of skid resistance. Glass beads, in particular, are practically invisible — they allow you to produce a skid-resistant floor without changing the floor's original appearance.

Keep in mind that glass beads and synthetic aggregate can be combined with acrylic coatings as well as resin coatings (epoxy, urethane, polyaspartic and polyurea). Silica sand, aluminum oxide, colored quartz and flint silica aggregates can only be used with resin coating combinations.

Another special quality of glass beads and synthetic aggregate is that, due to their light weight, they can be mixed in with coating materials prior to application. The four remaining, heavier types of aggregate must be broadcast by hand (as I like to call it, "feeding the chickens") directly after applying the coating material. For larger aggregate broadcasting jobs, a heavy-duty

industrial blower can be used to distribute the aggregate.

Also, think about your client's planned cleaning schedule as you consider different types of aggregate. Mopping is an efficient cleaning method for floors broadcast with glass beads and synthetic aggregate. But surfaces broadcast with any one of the heavier types of aggregates are more difficult to clean, meaning they should be reserved for places where pressure washing is a regular occurrence.

Application options

By asking your client a few simple questions about the surface, you can easily determine the appropriate aggregate for the job. What will the floor be used for? How will it be cleaned? And what qualities do you want the floor to have?

While applying a clear polyaspartic coating over a decorative finish, this crew broadcasts and back-rolls glass-bead aggregate for added slip resistance. The glass-bead aggregate will not take away from the aesthetics.

Once you've settled on the best type of aggregate for the job, it's safe to say the hard part is over. But there are still a few things to keep in mind during the application process.

First, consider how strong and skid-resistant the floor needs to be. For floors that are likely to endure a high level of abuse, you'll want to apply a large amount of aggregate, fully saturating the floor coating material. (This is called "broadcasting to the point of refusal.")

For floors that don't need to be as strong, you'll want to complete what's called a random broadcast. One worker broadcasts aggregate, throwing the material onto the floor randomly, while a second worker follows behind him and back-rolls the surface, evenly distributing the aggregate throughout the coating material.

I primarily consider aggregates to be functional — add them, and you'll have a tough, safe surface to walk on. But by incorporating certain types of aggregate, you can produce a floor that's both functional and beautiful. Whether on a

welding shop floor or a pool deck at a multimillion-dollar home, aggregate is a cost-effective no-brainer if you're looking to boost a surface's strength.

Trevor Foster is a regional sales manager and principal trainer for Miracote Products, a division of Crossfield Products Corp. and a regular contributor to industry publications and training events. Representing Miracote, he has conducted demos for industry events nationally and internationally. He can be contacted at trevorf@cpcmail.net.

Trevor Foster will present "Mastering Polyaspartic Coatings" at the 2012 Concrete Decor Show. For more, go to ConcreteDecorShow.com.

PRODUCT NEWS

A VOC-free polyaspartic coating

HP Spartacote has released Sparta-Flex Pure, a VOC-free polyaspartic concrete floor coating. Ideal for indoor applications, Sparta-Flex Pure is completely odorless and boasts a working time of 20 minutes. It is available in a water-clear high-gloss version as well as in all 14 standard HP Spartacote colors.

Sparta-Flex Pure is typically used in conjunction with HP Spartacote's Aqua-Flex primer to create an array of solid-color, seamless vinyl chip and quartz flooring systems. HP Spartacote Pure is designed to be installed in just one day with next-day return to service.

(866) 966-1329

www.hpspartacote.com

Arizona Polymer Flooring debuts three moisture remediation systems

Arizona Polymer Flooring has announced the launch of three VaporSolve Moisture Remediation Systems, epoxy coating systems formulated to isolate moisture-sensitive flooring from all levels of concrete moisture.

VaporSolve systems can be used when concrete has a known moisture problem, when concrete dries too slowly to meet a specific construction schedule, or as a preventative measure when concrete doesn't have a vapor retarder and future moisture conditions cannot be predicted.

The VaporSolve Basic System uses a single coat application of VaporSolve 100, a 100 percent solids epoxy. This system is applied when the concrete hasn't been contaminated with reactive silicate curing compounds or densifiers.

VaporSolve Ultra System uses a water-based epoxy as a primer that gives deeper penetration and better adhesion when applied to silicate-contaminated concrete. The primer is finish-coated with VaporSolve 100, which greatly reduces the possibility of concrete outgassing.

Finally, VaporSolve Fresh Concrete System uses a water-based epoxy formulation to bond to concrete that's six to 24 hours old. The finish coat is VaporSolve 100. This system eliminates water evaporation from the top of the slab.

(800) 562-4921

www.apfepoxy.com

NewLook introduces weatherproofer

NewLook International Inc. has introduced DriveHard, a concrete and masonry weatherproofer and fortifier.

The technology of DriveHard has been formulated to create a bond that permanently increases the life span of concrete and masonry. Its proprietary "nano-silicone/silicate" formula densifies, strengthens and makes the intended surface water-repellant by penetrating into and chemically reacting with the chemical properties of the substrate. DriveHard can be used to strengthen most concrete, masonry, brick or stucco surfaces, including driveways, patios, sidewalks, and architectural or exposed aggregate concrete.

DriveHard covers approximately 125 to 200 square feet per gallon and should be applied when the temperature is between 50 F and 90 F. Maximum strength and resistance will develop over several days. The treated area usually takes one to two hours to dry but can take longer depending on conditions. Restrict the use of the floor to light traffic and nonharsh chemicals for at least 24 hours.

DriveHard is not a sealer. It is recommended for use only as a concrete weatherproofer and densifier.

www.getnewlook.com

New cleaner removes efflorescence and more without harming sealers

Xfflorescence, from Surface Gel Tek, will remove efflorescence, dirt and grime, water lines and more from sealed concrete surfaces without damaging a sealer. Because it will not etch through the sealer, it won't harm the concrete surface. To apply, simply roll it on, scrub it in and rinse it off.

www.etchingconcrete.com

Mission Trail Baptist Hospital

Contractor: All Ready Services, San Antonio

Wanting attractive outdoor concrete that would hold up to heavy use, San Antonio's brand new Mission Trail Baptist Hospital called upon Ramiro Chavez and San Antonio-based All Ready Services.

"They predicted a high volume of traffic and didn't want to have to seal the surface all the time," Chavez says.

In addition to a durable surface, the hospital wanted to feature a river theme representing the San Antonio River and utilize different textures and colors covering almost 26,000 square feet of concrete.

To create the river, Chavez and his team embedded glass into the concrete. Their river winds through the courtyard, in front of the emergency room and past the front of the hospital.

For the rest of the job, All Ready Services applied a variety of textures to the freshly poured concrete using a spray-and-etch method, smooth troweling and a light broom finish.

"That was probably the biggest challenge, was making it look pretty and still be functional. It has to stand up to a lot of foot traffic and vehicles," Chavez says.

The surface was then colored with a combination of Water-Based Stains and Fast Stains from Westcoat Specialty Coating Systems. A layer of EC-95, a polyurethane topcoat also from Westcoat, sealed the job.

Although the project has been complete for less than a year, the Mission Trail Baptist Hospital is so pleased with the results that they have contacted All Ready Services to complete a second phase of the project.

www.allreadyservices.com

Photo courtesy of All Ready Services

The Right Rubber Material for Your Custom Molds

by Chris Karlik

Some 25 or more years ago, when my father would tell me he needed help making a rubber mold, he meant only one thing — using latex. Liquid rubbers for making production-quality molds have come a long way since then. Science has continued to perfect specialty compounds for mold-making. These compounds are designed to address the very specific challenges associated with very different mold applications, including architectural and decorative precasting.

In broadest terms, mold material comes in three varieties: latex, polyurethane and silicone. Each has its strong points and weaknesses, and choosing the right one for the job is the most important step in the process. Your choice should be driven by the answers to a few questions.

You should identify:

1) What is the project schedule? How many pieces will I be casting?

2) What casting material is to be used in the mold?

3) What is the composition and level of detail of your master?

4) Are there any special considerations?

With these parameters identified, you should be ready to select the best rubber material for the job.

Latex

Natural latex has been used in molds made for casting plaster and concrete since the mid-1940s. It is unrivaled in strength, flexibility and resilience. Latex rubber is applied by brushing many layers onto your master over an extended period of time. Application will start with thin coats at the beginning and shift to much heavier layers during finishing coats.

After the desired thickness is built up (an average mold will get 30-plus coats), the mold will be left three to four days to achieve its final cure. This step is known as "vulcanization," and it is where the latex gains all its beneficial qualities. Vulcanized latex is unaffected by the heat generated during plaster and concrete cure. It reads and maintains fine detail very well, has a long life expectancy and provides the most bang for the buck. A latex mold can turn out hundreds of concrete casts over many years if treated well.

The drawbacks of latex are all issues of time and application. Latex molds require more time and attention and can take two weeks to complete. Liquid latex has an ammonia smell to it and should be used in a well-ventilated area.

Also, care must be taken when purchasing liquid latex. Lower-quality products may contain fillers that deaden flexibility and memory, and materials with low solids content can suffer excessive shrinkage. I have also seen bargain latex degrade rapidly from exposure to sunlight and certain release agents. Latex would not be used for a poured mold and will always need a rigid backer mold for casting.

I've only brushed on latex rubber. I understand it can be sprayed, but I prefer the control I get with a brush.

Polyurethane

Polyurethane mold rubbers represent about 90 percent of the synthetics I use. Polyurethanes are abundant, very versatile, and vary vastly in their physical properties.

One key fact about polyurethane rubbers is that they can be used to create poured molds, not just brushed or sprayed-on ones. Poured rubber molds are solid cubes or slabs that require a greater amount of rubber material but can be used for casting without the need for a supportive backer mold. They cure at room temperature and can be ready for use in as little as a few hours, though most are cured and ready the next day.

Polyurethanes come in different consistencies, and they can be thickened to address special circumstances in your mold creation process.

It's also important for the polyurethane to be thixotropic, which for this discussion refers to the liquid's ability to be brushed on yet stick and stay where you apply it. This is of great benefit when making a mold with horizontal overhangs or doing an on-site mold for duplication of a piece that cannot be brought back into your shop.

Polyurethane rubbers are rated by hardness. A rubber with Shore A 20 hardness is soft, while one rated Shore D 45 is very firm. The firmness you want depends in part on the depth and type of details in the piece you will be casting. Deep voids and high-relief detail are delicate and need a soft rubber that will easily fold in on itself when pulled away from the cast face. Firm rubber being pulled from a piece with thin, unsupported details can damage them and ruin your cast.

Polyurethanes have great chemical resistance and are perfect for casting polyurethane, epoxy, and polyester resins.

However, polyurethane is not as hearty as latex and will wear out faster, especially around fine details and voids. Solvents will have a destructive effect on certain polyurethanes, and care must be taken with each type of polyurethane mold product when choosing cleaners and release agents. Some polyurethanes will not bond to themselves after an applied layer has cured, so care must be taken while applying them not to allow too much time to pass between coats, or delamination can occur. If polyurethane molds are stored with folds or wrinkles in the material or even slightly bent or curved they will likely hold those deformations long term.

Silicone

Silicone mold compounds are in most ways like polyurethane compounds. The different types vary greatly, they all cure reasonably quickly at room temperature, and they can be brushed on or poured.

Generally, silicones are softer and more chemically resistant than polyurethanes, making silicone a great choice for historic restoration and duplication as it reduces the chance of damaging the original piece being molded.

Silicone molds do not require any release agent when casting resins (including when "cold-casting" a resin mixed with metal powder) and need little more than a light mist of silicone release agent every other pour when casting plaster or concrete.

All that said, silicone compounds are generally reserved for situations where no alternative would do. To begin with, they are more expensive than comparable polyurethanes. They are very finicky, so mix ratios and weights have to be precise. Silicone rubbers cannot be used over plastilina (sulfur-based sculpting clay) or other materials that could be cure inhibitors. Silicones utilizing a tin-based catalyst are known to shrink slightly in the curing process.

To bring this article back to the beginning, selecting the correct mold-making material is just as important as learning how to correctly mix and apply it.

If there is a variable in your project you are unsure of, try calling the tech wizards at your rubber distributor. They are a vast and friendly resource that I use frequently.

Chris Karlik is a fourth-generation sculptor and mold-maker who grew up around precast concrete. He works for Florida Statuary and Mold Inc., of St. Petersburg, Fla., and Absolute ConcreteWorks, of Poulsbo, Wash. He can be reached at crk@karlik.com.

Chris Karlik will present "Creating Basic Precast Production Molds" at the 2012 Concrete Decor Show. For more information, go to ConcreteDecorShow.com.

SUCCESS WITH CONCRETE COUNTERTOPS

An Introduction to Self-Consolidating Concrete

by Jeffrey Girard, P.E.

Self-consolidating concrete (SCC), also known as self-compacting concrete, is an amazing and special type of concrete that is highly flowable and resists segregation. It combines specialized mix designs with advanced chemical admixtures to achieve a concrete mixture that, under its own weight, can spread through and around dense reinforcements to adequately fill voids without segregation or excessive bleeding and without the need for significant vibration. In the decorative concrete arena, it has been used to produce castings with a high surface quality, often with few or no pinholes. Less labor, quicker casting times, better surface finish and increased concrete densities are common reasons for choosing SCC.

The key properties of SCC are its filling ability, passing ability and resistance to segregation.

"Filling ability" refers to how the mixture flows and spreads on its own.

"Passing ability" refers to how the coarse aggregate passes through congested reinforcing.

"Segregation" is the settling and separation of the aggregate from the cement paste.

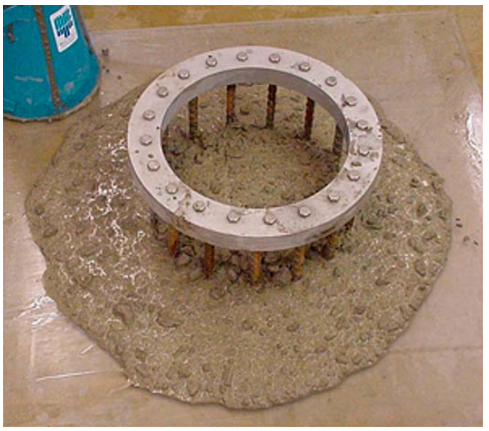
Achieving a concrete mixture that is both extremely workable and also resists segregation is challenging and requires a systematic approach that encompasses ingredient selection, mix design and testing.

Inspecting the surface of a concrete vanity.

Before getting into what makes SCC, let's first look at ordinary concrete

Photos courtesy of The Concrete Countertop Institute

A slump flow test showing the spreading characteristics of self-consolidating concrete.



The ASTM C 1621 test measures SCC passing ability.

for comparison.

Normal concrete mix designs tend to be aggregate-rich and cement-lean. The cement content is usually only 6 sacks per cubic yard, which translates into 564 pounds of cement in about 3,800 pounds of concrete. And typical water-to-cement ratios often range from 0.40 to 0.60.

SCC is different. It uses less coarse aggregate and more cement and cement-sized filler material. Cement content sometimes exceeds 8 or 9 sacks per cubic yard. Typical water-to-cement ratios are often below 0.4. This makes these mixes dense and very strong, with compressive strengths commonly greater than 6,000 psi.

Generally, normal concrete mixes require more effort to place, greater amounts of vibration to consolidate and have the potential for developing voids and defects (honeycombing) when adequate and thorough consolidation is not performed. Using a conventional concrete mix for a column or footing that has dense, congested rebar requires thorough and careful vibration to consolidate the concrete, eliminate voids and thoroughly encapsulate all of the rebar. This takes skill, care and time, and if it's done improperly or inadequately, the cost of repairing (or replacing) the defective structure can be very expensive.

PRODUCT NEWS

Ben Ashby, ex-Concrete Solutions exec start Countertop Solutions

In the wake of the Rhino Linings Corp. acquisition of Concrete Solutions, Gerry Sadleir, vice president of Concrete Solutions for 25 years and a trainer for 14 years, has teamed up with Ben Ashby, the creator of the Ashby Countertop System, to create Countertop Solutions.

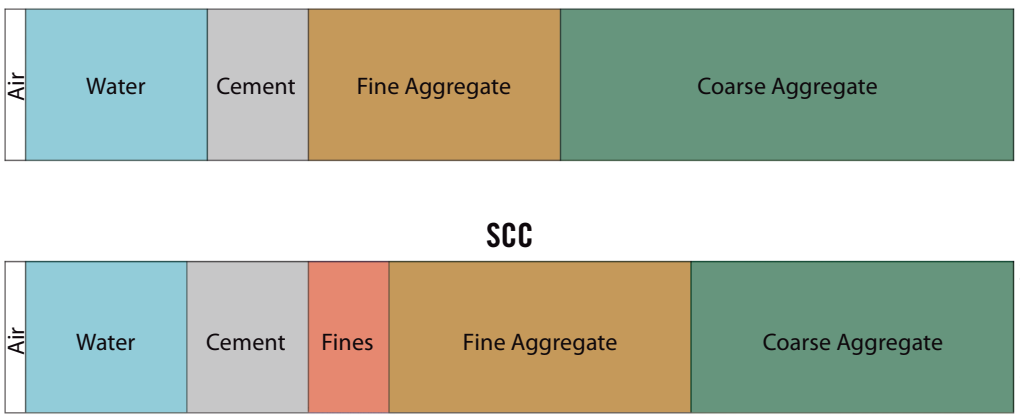
The new company offers the line of countertop mixes, colors and molds originally sold under the Concrete Solutions name. What's more, Sadleir and Ashby have developed and released several dozen new sink, edge and decorative molds, along with new sealers and polishing spray products. In addition, they have released a GFRC mix that turns out a unique decorative finish when used alongside their Ashby's Marbleizer product.

www.countertopsolutions.net

Cheng releases Artisan Collection

Cheng Concrete has released the Fu-Tung Cheng Artisan Collection. The first-ever release of precious minerals, fossils and unique inlays from Fu-Tung Cheng's personal collection includes fine crystals, ammonites, custom tiles and metal parts.

www.concreteexchange.com



The volumetric ratio proportions of regular concrete versus those of self-consolidating concrete.

Normal concrete requires various degrees of effort to move, spread, level and consolidate. Workability is commonly measured using a slump cone, where the slump index measures the vertical deformation of an unsupported cone of fresh concrete. In contrast, the high flowability of SCC is measured in terms of spread instead of slump, because the material flows so readily. The ASTM slump flow test is similar to a standard ASTM slump test, but instead of measuring a vertical height change, a horizontal spread measurement is made instead; typical spread values range from about 20 to 30 inches.

Normal concrete's workability is usually enhanced by adding water or, preferably, adding a water reducer or superplasticizer. However this only goes so far. Adding too much water or too much superplasticizer will cause segregation and could also affect setting time and early strength gain.

In contrast, self-consolidating concrete starts with a purposeful mix design that has proportionally less coarse aggregate, a low water-to-cement ratio, more cement and very fine material. Ordinarily such a mix would be difficult to work with, but the use of advanced superplasticizers transforms the stiff, nonworkable mixture into a highly flowable (or deformable, in the technical parlance) mix that self-spreads and compacts easily all on its own. Control of segregation comes first from the mix design and then from the use of viscosity-modifying admixtures (VMAs). This combination prevents aggregate separation and cement cream bleeding.

Why SCC is extraordinary

What's important to realize is that SCC is not simply ordinary concrete that has a stronger superplasticizer added to it. SCC is a system that's designed from the ground up to achieve characteristics ordinary concrete cannot attain. Making highly flowable concrete that resists segregation requires a delicate balance between careful mix design, proper admixture selection and dosage. It depends upon a care and awareness by all those involved in the design, mixing and placing.

Excess moisture in the ingredients, especially the fine aggregates, can have a profound influence on the consistency of the mix. Small fluctuations in moisture content may lead to segregation or affect the mix's ability to flow. Variations in aggregate gradation from batch to batch can cause consistency problems.

VMAs help compensate for variations in aggregate gradations and can moderate variations in moisture content. But even with VMAs, SCC is very sensitive to changes in moisture content. Adding water will make it more fluid but will also cause the mix to segregate. Field adjustments must be made carefully by experienced personnel. The common practice of adding water to the mix truck is too crude and will most likely ruin an SCC mix.

SCC contains large amounts of fine material, which generally means there will be little or no bleed water. If SCC is used for flatwork, additional precautions must be taken to prevent the surface from drying out and developing plastic shrinkage cracks.

Vertical forms must be made watertight and braced to resist full head pressure from the concrete. SCC stays fluid longer than normal concrete, so forms must be filled at an appropriate pace.

In the April 2012 issue of *Concrete Decor,* we'll take a closer look at issues to consider when mixing self-consolidating concrete.

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.

Jeffrey Girard will present "Step-by-Step Instructions for Creating Amazing GFRC Countertops" at the 2012 Concrete Decor Show. For more, go to ConcreteDecorShow.com.

PROJECT PROFILE

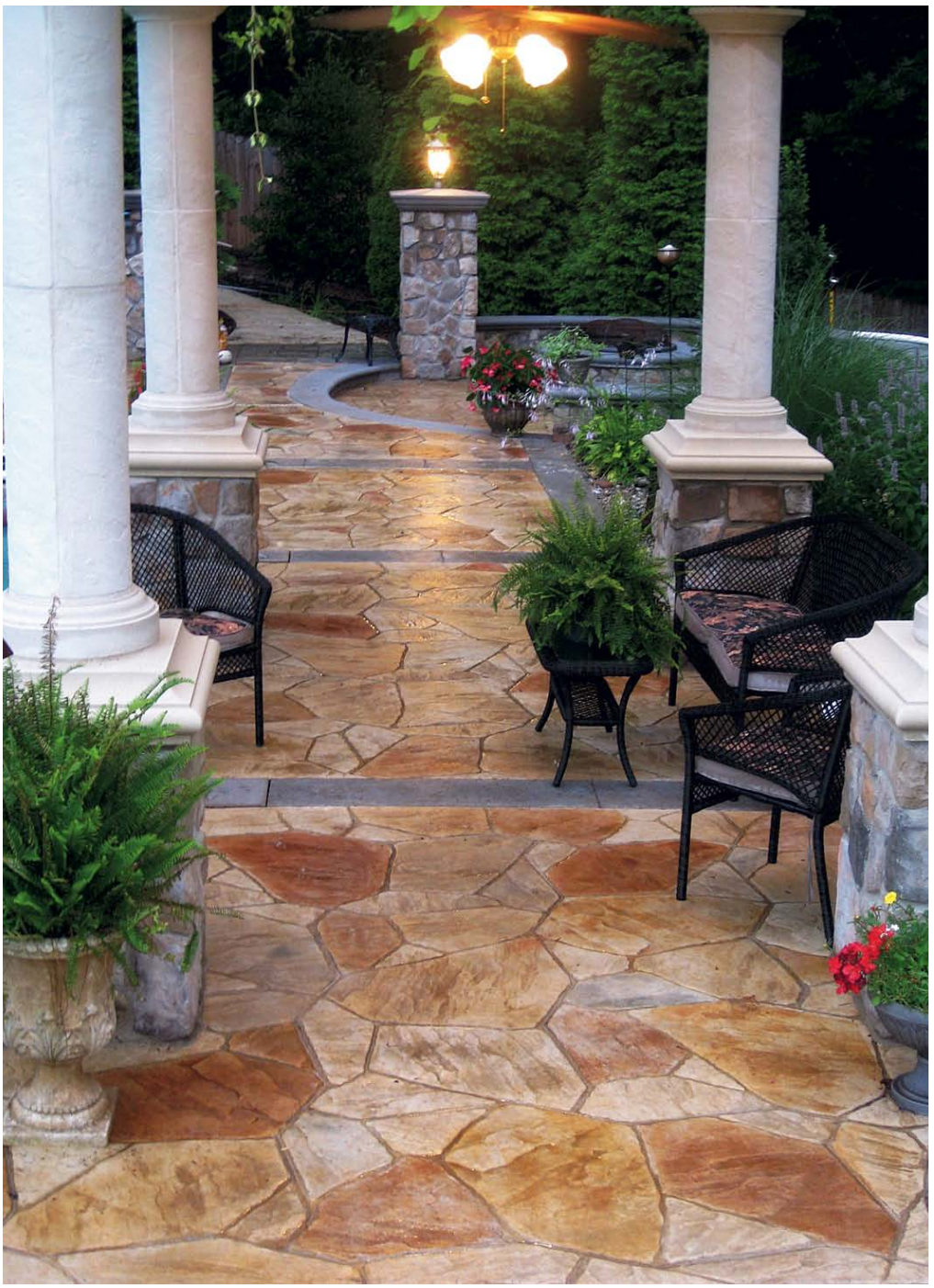
"Hidden Oasis"
Stafford, Va.

by David Searls

It's doubtful that any homeowner has found a more elegant way of decorating a neglected piece of land whose main feature is a septic tank field than the owners of the "Hidden Oasis," a tropical-themed project that blossomed in a residential backyard in Stafford, Va.

Those wondering just how much of a difference decorative concrete can make to a property should take a good look at this project, designed and installed by Greystone Masonry Inc., a Stafford contractor. A 4,200-square-foot patch of ground that looks like an entire nursery school might have stomped and traipsed through it for a decade or so was converted to — well, see for yourself.

"We incorporated a copper-roofed cabana with flat-screen TV, decorative concrete countertops with built-in grills, refrigerators, stove top and sink," recalls Carly Dittmann, Greystone Masonry spokesperson and niece of owner Dan Dittmann. Greystone handled all project details without benefit of architect or



Photos courtesy of Greystone Masonry Inc.

Project at a Glance

Client: Private homeowner, Stafford, Va.

Decorative Concrete Contractor: Greystone Masonry Inc., Stafford, Va.

Project Manager: Dan Dittmann

Project Coordinator: Luisa Dittmann

Timeline: Six months (with some additional work afterward)

Project Specs: Resurface 4,200 square feet of backyard, and add pool and multiple architectural, lighting and water features

Materials Used: Arizona Flagstone stamp from Stampcrete; Grand Ashler Slate stamp and Slate texture from Matcrete; dolphin border stamp from Proline Concrete Tools; Lithochrome Color Hardener in Steadman Buff, Lithochrome Antiquing Release in Pecan, Lithochrome Chemstain in Antique Amber, Padre Brown and Faded Terracotta, and Scofield Selectseal-W from L. M. Scofield Co.

The yard's slope had a 10-foot elevation difference, but Greystone Masonry used the topography to its advantage to create multigrade levels for entertaining.

More than 2 1/2 tons of 4-pound rebar were installed 12 inches on center for extra reinforcement in the new concrete pool at the "Hidden Oasis."

landscape designer, and Dan Dittmann served as project designer and manager.

At the far end of the pool is a large stone veneer fireplace with retaining walls and precast stones. A large fire pit is surrounded by masonry sitting walls. The pool includes an elevated 9-by-9 spa with jets that overflows into a 44-by-22 main pool. Remote control activates lighting, pool cover, pool heater, outdoor televisions, waterfalls, overhead fans and surround-sound music.

The starting point, and the only architectural feature remaining from before the pour, is a modest wood gardening shed. All else is a hardscape paradise of stone, masonry, copper and decorative concrete. The project incorporates this intriguing blend of hard natural surfaces and textures and water features in creating a four-season playground with an entertainment space for every member of the family. The swimming pool and cabana, the Jacuzzi, an 8-foot deep, 15-square-foot koi pond stocked with about 25 fish, the fireplace and fire pit, the playground, the volleyball pit and outdoor cooking and dining spaces accommodate a full schedule of activities day or night.

The work involved a crew of up to 25 and a three-day pour, says project coordinator Luisa Dittmann, Dan's wife. The pool area alone took a full day. First, however, came the three porches, a few days ahead of the two days it took to pour the foundation. The sheer size and scope of the project took up time, as did the obstacle of the topography itself.

"The access challenge made it really, really difficult," Luisa explains. "The site is surrounded by a small wooded area." All materials had to be lugged to the site by hand because the confined space and the terrain forbade use of a Georgia Buggy. "That was really the only serious challenge we faced," she says.

The foundation of the project is a 5-inch concrete pour over a 3-inch base of gravel. This was surfaced with a tiered concrete deck stamped primarily with an Arizona Flagstone pattern from Stampcrete. The company uses its own custom portland concrete mix. "That's all we'll ever use," says Luisa Dittmann. It's a straight portland 4,000-psi mix with air and residential fibers. It's not so hard that it won't stamp easily, but not so soft that it takes forever to dry.

For color (and durability), a batch of L. M. Scofield Co.'s Lithochrome Color Hardener in Steadman Buff was broadcast and bull-floated. Next came second and third applications of Steadman Buff, followed by a Lithochrome antiquing release agent in Pecan.

In all, the project employed stamp designs from three manufacturers, Luisa notes. Random Scofield acid stain highlights in Antique Amber, Padre Brown and Faded Terracotta were applied once

Workers installed 80 yards of shotcrete when constructing the pool.

Crews had to cautiously work around more than one mile of plumbing and electric.

the concrete cured. They finished with a water-based Scofield sealer.

The complex layout was completed in sections, most of the work done between November 2008 and May of the following year. "Just before summer set in," says Carly Dittmann. The final detail was the copper-roofed cabana.

Additional concrete features include the immense concrete swimming pool, augmented by fountain jets and surrounded by a dolphin-stamped lip. (The dolphin stamp came from Proline Concrete Tools.) And then there's all of the custom precast steps.

A surface Luisa Dittmann describes as a "rug" is a 12-by-12 raised slate-patterned space in front of the fireplace. There are two more, in front of the porch and outdoor kitchen, all raised concrete stamped and textured with a clever combination of tools from Matcrete. The raised surfaces stand out like rugs indoors.

The little dolphin statues were custom-precast from concrete and sand by a carpenter who does similar pieces for Greystone on occasion.

Add such delicate Caribbean touches as matured palm trees and shrubbery sculpted in the graceful silhouettes of tropical fish, and you have living and entertaining space that's very difficult to leave. Who'd ever take a vacation when this Hidden Oasis is what greets you every time you step into your own backyard?

www.greystonemasonry.org

The "Hidden Oasis" project won Greystone Masonry Inc. a 2012 Decorative Concrete Award from the American Society of Concrete Contractors in the category of Cast in Place, Stamped, Under 5,000 Square Feet. We'll publish a complete list of the award winners — plus photos — in the next issue.

PRODUCT NEWS

Wet air stone-cutter from Applied Diamond

Applied Diamond Tools has introduced the GPW-216C 7-inch wet air stone-cutter. It operates at up to 0.93 horsepower and has a maximum speed of 7,000 rpm.

www.toolocity.com

PROJECT PROFILE

Family Christian Center
Clermont, Fla.

by Ted Uram

The new worship center at the Family Christian Center in Clermont, Fla., isn't your grandfather's church. It boasts sleek lines and contemporary design.

So when pastor Rick VanWagner and his wife, Beckee, contacted decorative concrete contractor Jim Price and his Longwood, Fla., company American Concrete Coatings, style was a consideration for them. The VanWagners were looking for a surface that would complement the building, as well as one that was easy to clean and maintain, a brilliant surface that would virtually last forever.

Price invited the couple to visit his showroom in Longwood, the floor of which is a dyed and polished concrete surface. According to Price, Mrs. VanWagner fell in love with the floor almost immediately.

Price explained the benefits a dyed and polished surface could provide. He explained how the shine comes from the diamond polishing procedure, unlike an epoxy surface where gloss comes from a resin. He went into detail about how the floor became densified and durable, noting that there would be no hydrostatic issues to contend with because the floor would breathe and that there were no sealers to delaminate or fog. (He had used Lythic Solutions' Densifier and Protector.)

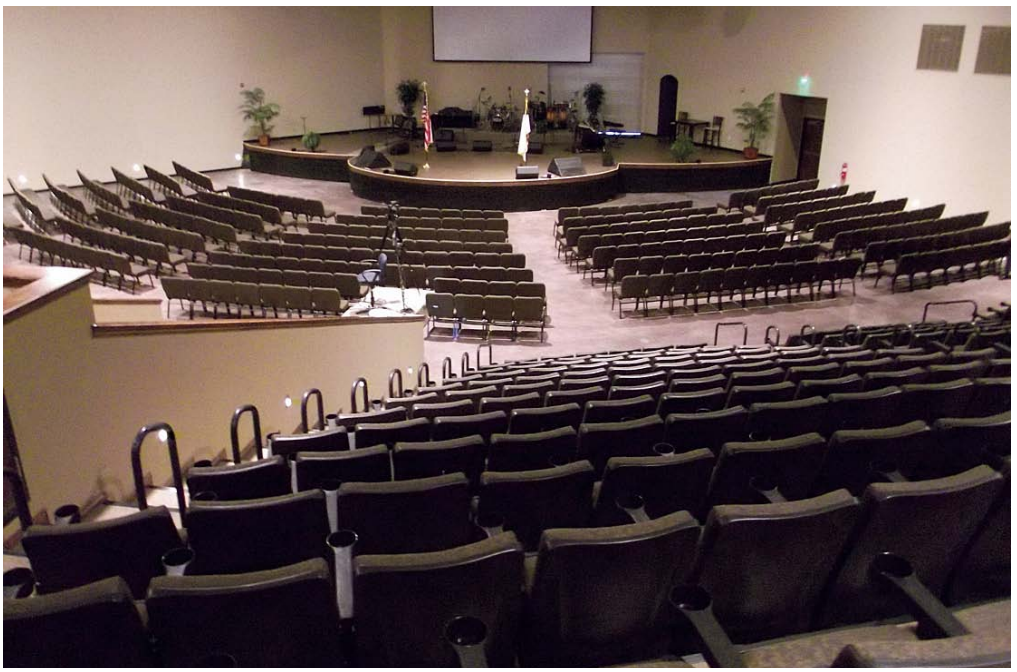


Photo courtesy of American Concrete Coatings Inc.

He described how there would be no odors, an inherent problem with carpeted surfaces, and that the floor would provide good reflective light. Of course, he also made sure to add that the floor would be a breeze to clean and maintain for years to come.

But Mrs. VanWagner had already made up her mind. She was sold.

"She was very excited about the natural look you get with polished concrete," Price says.

The room seats about 1,400 people on stadium-style risers, which the VanWagners also wanted polished. Since the equipment used to polish the surface was large and bulky, getting it up to the top riser was going to be a challenge. The concrete

Project at a Glance

Client: Family Christian Center, Clermont, Fla.

Decorative Concrete Contractor: American Concrete Coatings Inc., Longwood, Fla.

Timeline: Three weeks

Project Specs: Dyed and polished concrete for floor and risers in new worship center

Polishing Equipment Used: Planetary grinders: Dynamic Diamond Tooling 780, HTC 500; hand grinders: Makita GA7021, Makita 9227C; Blastrac 500 series shotblaster; Dynamic Diamond Tooling metal-bond and resin-bond diamonds

Materials Used: Lythic Solutions Inc. Densifier and Protector, American Decorative Concrete Supply Co.'s AmeriPolish Polished Concrete Dye in Chocolate Brown

runners were 60 to 80 feet long and only 3 feet wide. Price solved this issue in a unique way.

Using a lift, polishing equipment was hoisted to the top riser. Price and his team assembled several plywood ramps, and they worked down, from riser to riser, until they reached the main floor.

But that wasn't the only challenge the team faced.

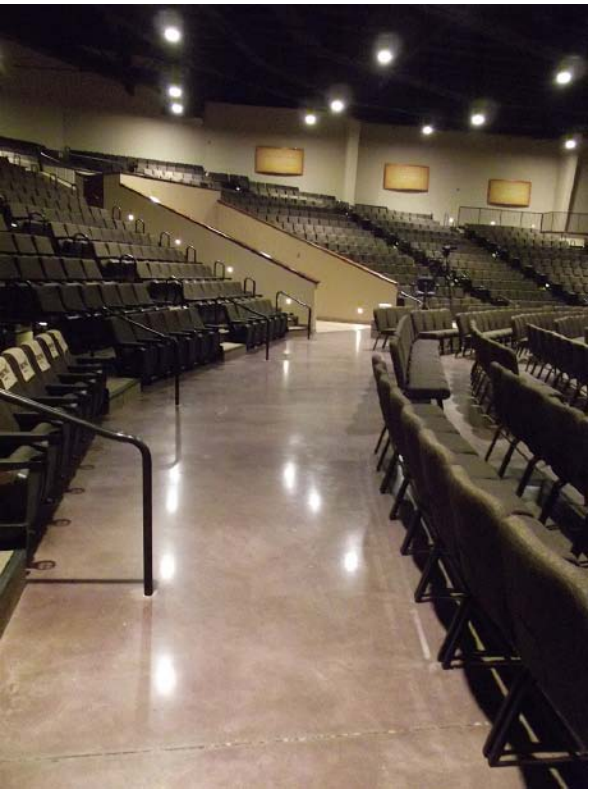
"Your equipment only goes so close to the wall," Price explains. "Then you have to hand-grind your edges where it butts up to the wall." A crew of five people had to run hand grinders to make sure all of the surface, even up into the corners, was properly prepared.

There were a lot of risers to be done. It took nearly two weeks to get it right. Only then could the team tackle the main floor.

The grinding process started using Dynamic Diamond Tooling diamonds. Price explains that 30/40 metal-bond diamonds were used first, followed by 80/100 metal-bond, then 150 metal-bond.

The polishing team then switched to resin-bond diamonds, which continue to hone and polish the floor. This process begins with 50/100 resin-bond, then graduates from 200 resin-bond to 400, 800 and 1,500. At the 200 mark a liquid densifier from Lythic Solutions was applied using a hand pump sprayer. "The nanotechnology of the Lythic product fills in the voids of the concrete," Price says.

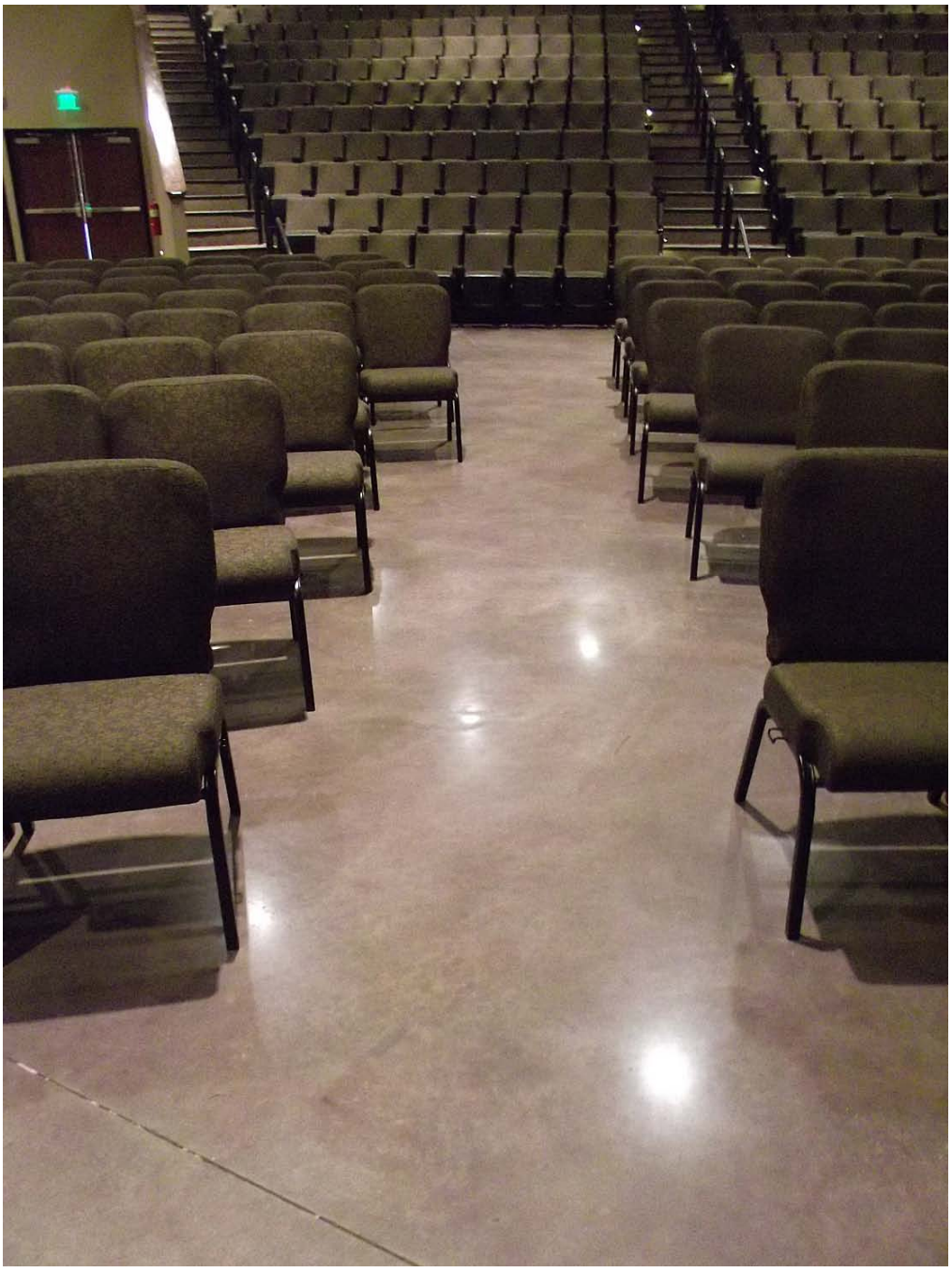
At the 400 mark, the color was applied. The A.C.C. team selected a Chocolate Brown dye from American Decorative Concrete Supply Co.'s line of AmeriPolish Polished Concrete Dyes. One coat of the dye was applied, then the floor was polished



with the 800 resin-bond, followed by a final polish of 1,500 resin-bond.

When polishing after the dye, some color is lost, Price explains. "The color is a penetrating color, so not much color is removed. But the original color is darker because it is at 100 percent. When you run your diamonds over it, it does lighten it just a little bit because you are taking just a little bit of that surface off, and what is showing is the penetrated surface of the concrete."

Price took this into account. Before any work was done on the floor, his team carefully prepared a test sample so that the customer could see exactly how the finished surface was going to turn out.



Price says preparing a test sample is critical to the overall success of a floor. "When you run your diamonds over it, the color of the floor does lighten a little bit because you are taking a little bit of the surface off," he says. He adds that this is why preparing a test sample is so important. "It's not like going to a paint store and picking out a color. You are going to get a certain amount of mottling, and every floor is different."

Price adds that doing a test sample will provide the customer with realistic expectations. He says it's a good way to establish a standard, especially on a floor as large as this one was.

Overall, the team spent two weeks on the risers, which took up nearly 6,600 square feet. The main floor itself was about 5,600 square feet and took the team another week

to completely finish.

Price credits Dynamic Diamond Tooling with helping with the success of the floor. "Ron (Yagur, of Dynamic) was just super to work with. He came to the project with us and examined the concrete. He brought out several different grades of diamonds to determine which ones would be used for the project. He was right there with us, and during the course of the project he was there to offer suggestions."

The finished product speaks for itself, and the Family Christian Center now has a surface that will last a lifetime and is virtually maintenance-free. Price provided the maintenance crew at the center with instructions on how to keep the floor looking like a showroom for years to come, which includes regular maintenance using an autoscrubber and Lythic brand cleaner. This helps to protect the floor and keep it shiny. No wax is necessary.

www.accoatings.com

The Alamodome

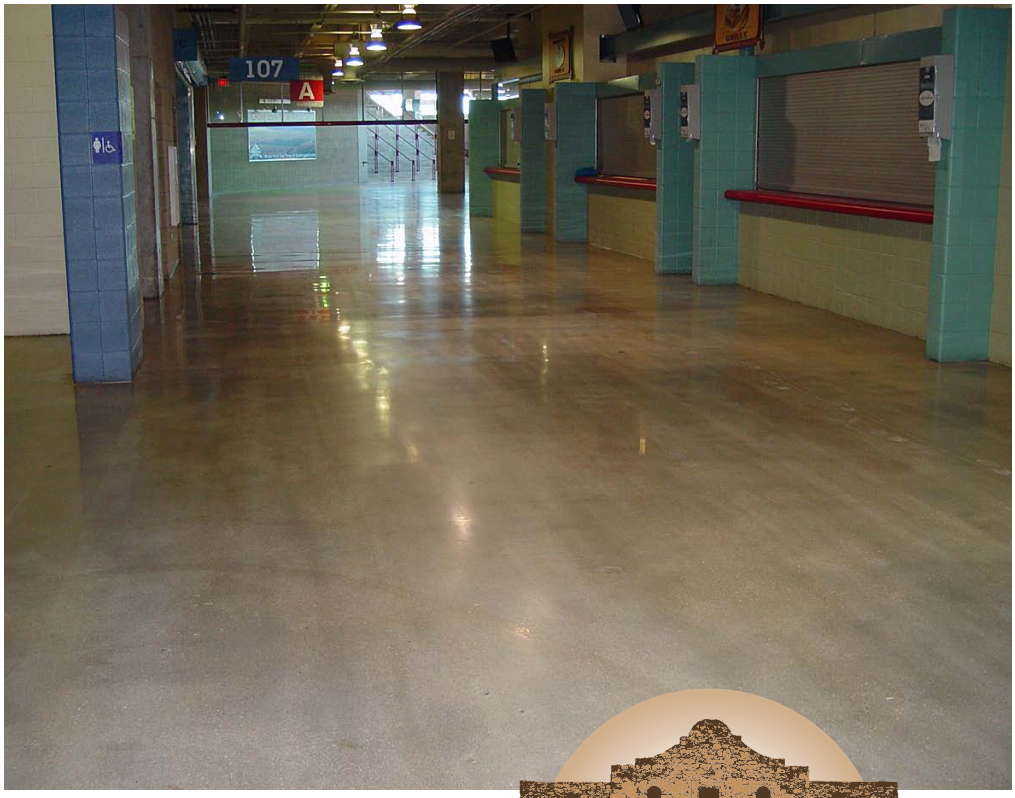
Contractor: Stone Care of Texas, San Antonio, Texas

The Alamodome hosts big-time events such as concerts, trade shows and the NCAA Men's and Women's Basketball Championships, so by the time its concrete flooring was 14 years old, it had endured some heavy abuse. Between the skid marks from shoes and layer upon layer of wax and paint, the original floor got to a point where it was almost black from wear.

Stone Care of Texas, based in San Antonio, was called upon to restore the flooring to its original state and provide a low-maintenance solution.

The company spent nearly eight weeks polishing 102,000 square feet, starting with a 40-grit dry polish and taking it all the way up to 3,000 grit. Stone Care of Texas and the client opted to use FGS/PermaShine products from L&M Construction Chemicals Inc., due to their low downtime. All of the work was done after hours and in between events to avoid interrupting the Alamodome's operations. The job was finished in February 2008.

www.stonecareoftexas.com



Photos courtesy of Stone Care of Texas

Learn the Hard Facts about Densifier

by Jennifer A. Faller

Densifier is a underutilized, misunderstood and overlooked key to producing a beautiful and durable polished concrete floor. During the 1990s many beautiful floors were polished without densifier, and they quickly developed signs of wear, especially the loss of that durable shine. Since then densifier has become a staple when polishing concrete, but my experience daily tells me that most polishers have little to no clue why.

These silicate solutions are known by several names: densifier, hardener, penetrating reactive sealer, permanent protection, dust-proofer, water-repellant. In this article I will refer to this chemical as a densifier.

When a concrete slab is ground, honed, and polished, the diamonds will scratch the surface of the concrete. Whether the scratches are deep and wide from 30/40 metal bonds or shallower from gentler-cutting 50 hybrids, the result is that diamonds create valleys (scratches) in the hard concrete with edges along both sides and exposed pores everywhere. The pores have variable sizes — some run directly into a piece of aggregate (rock or sand) and some connect to another capillary just underneath the surface.

Think of the scratch valleys (the scratch patterns) like you think about expansion joints, saw cuts or cracks. The reason we fill that void is because the edges are the most vulnerable parts of the concrete. Filling the voids with a semirigid material allows the vulnerable, brittle and weak edges to be supported and protected.

Picture a structural crack on an old slab. Most likely some of the edges have broken away in high-traffic areas, resulting in a crack that has widened over time. This is spalling. Now think about the expansion joints or saw cuts on a slab — the same

thing occurs there. Spalling can occur when an object strikes the edge repeatedly or even once hard enough to cause damage.

In the early days of polishing, it was typical to fill the joints at the end of the job. Over time, joint sealant manufacturers noticed this problem and developed new technology that hardens quicker and does not smear when exposed to high heat from the diamonds. This allows for earlier filling and better joint protection, and I believe that this is the reason why most experienced polishers fill their joints after their first cut today.

Now, what does porosity of the concrete really mean? Think of concrete as a really hard sponge, and picture its pores. They too have edges, and these edges are also vulnerable, brittle and weak. The same conditions that damage a joint or saw cut will also cause damage to the edge of a concrete pore. If the concrete pores are not protected, some of those vulnerable pore edges will break. When we speak about a slab "dusting," this is where the dust is coming from.

Since we cannot fill each pore with joint sealant, how can we protect the vulnerable edges of the concrete pores?

The answer is densifier. Densifier applied to rejection will supply that protection to the valley edges of the scratches and to the concrete pores themselves.

Why concrete seems thirsty

Densifiers are either alkali metal silicates or colloidal silica. When your choice of densifier is applied to the concrete and absorbs into the concrete slab, the silicate reacts with the free lime (excess calcium hydroxide) and forms calcium silicate hydrate (CSH), which adds to the CSH formed in the hydration of portland cement.

The reason these products are called densifier is that the CSH compound fills the concrete pores, increasing strength, hardness, and mass per volume. Each densifier reaction fills a little bit more, so I recommend densification to rejection to fully protect those vulnerable valley edges.

Just because the densifier has been applied evenly, penetrated, and dried in the concrete does not mean that your job is done. Concrete varies in porosity throughout a slab. When one area quits absorbing densifier, the dry area next to it may still be absorbing densifier. Think of the areas around columns, the edges, the areas with more aggregate exposed, and the areas that were higher when you ground the floor so that your grinder did not run as smoothly. These porous areas tend to absorb densifier faster and take a greater quantity. They will need to be detailed by your continuing to apply or redistribute more densifier. It is extremely important to keep redistributing the densifier from the areas that are wet to the areas that are dry. You want to quench that concrete's thirst!

Your job is done when the concrete has absorbed the silicate solution across the entire slab and dries out at the same rate.

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I also want to clear up the common misconception that when a densifier gels, it is because it has reacted with the concrete and the slab has chemically absorbed all the densifier it can. This notion is incorrect.

All densifiers are silicate blended in a solution of water, with a variety of surfactants, wetting agents, performance additives and "secret ingredients." The thing that all densifiers have in common is that as their water begins to evaporate, they get thicker and change from liquids to gels. For most brands of densifier, simply adding more water to the slick gel will allow it to go back into solution. Then the densifier can continue to penetrate and react. When you scrub and pick up the densifier because it gelled, you are wasting money and underdensifying the concrete. The concrete is not done drinking. It is just that the densifier became too thick.

Application tips and thoughts

In the 15 years that I have been densifying slabs, I have found some common threads. After about 20 minutes the concrete seems to quit taking the densifier. By performing some intimate contact like scrubbing, I break the surface tension and the densifier will start to penetrate again — that is, if it is still in a liquid state. If it's not, add water first and then break the surface tension.

The movement can be accomplished with a microfiber pad, a soft nylon-bristle push broom, or a nylon brush on a scrubber. I prefer the broom because the silicate flows through the bristles and does not build up like it does when using a pad.

Once the surface tension is broken the concrete will take densifier for 20 to 40 more minutes, with continued redistribution. Then, do an evaluation. If most of the material has penetrated, redistribute the remaining product from the wetter areas to the drier areas. Add water to the slick areas, spread out evenly and let dry.

If all material has absorbed, there's no need to wash the slab.

Lastly, I am often asked: Why not pour all of the densifier onto the concrete slab at once?

The answer is because if ALL of the densifier does not penetrate, you will have to add water if it gets slick or it stops penetrating, and at that point the clear water and the clear densifier look the same. If instead, less is applied and all of that penetrates, then you know you have achieved some kind of coverage rate.

We all want to see polished concrete live up to its marketing claims of durability, sustainability, and low life-cycle cost. Applying densifier to rejection will benefit the concrete and help make that job much easier.

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.

When Are You Done Densifying?

How can you tell that the slab has been densified to rejection and you can stop applying it?

- Densifier has been applied for a minimum of one hour.
- Any areas that have gotten slippery have been diluted and redistributed.
- The concrete is about the same color across the entire surface.
- The crazing/spider/shrinkage cracks have been filled and are no longer as pronounced.
- You twist your foot on the dry densified concrete and it squeaks.
- You've reached the recommended coverage rate for the square footage of your slab. (Make sure to measure the square footage before you apply the densifier)
- When done densifying, you check to see how many gallons were applied, and the number is close to the specified quantity. If it isn't, keep applying until the quantity gets closer.

One last tip: Sometimes waiting a few hours or overnight and densifying again allows the slab to drink in much more densifier.

PRODUCT NEWS

Lythic's Duet dyes are mixed with densifier, bonded to concrete

Duet Colors from Lythic Solutions are water-based dyes that are specially formulated to be mixed into Lythic's reactive colloidal silica densifier for deeper penetration and more effective bonding. The densifier becomes a permanent part of the concrete and bonds the color right into it. Dyes are available in 25 colors that enhance and showcase the natural character of the concrete.

Duet dyes can be mixed with water as well as Lythic Densifier and applied with a pump sprayer. Coverage is 400 square feet per gallon.

Duet Colors are nonflammable, eliminating the hazards of solvent-based dyes. They are also free of solvent odors, minimizing interruption of normal activities. They are shipped as concentrates.

www.lythic.net

Superabrasive pads for maintenance

Diama-Clean Maintenance Pads from Superabrasive are high-quality diamond-impregnated pads available in a variety of sizes for use under Lavina machines as well as different models of swing machines and burnishers. Diama-Clean pads require only water, not wax or chemicals, and are an environmentally friendly solution for maintaining floors. Diama-Clean are also safe for daily use.

(800) 987-8403

www.superabrasive.com

Wagman adds to rotary line

A new 180-Grit rotary bristle has been added to the line of rotaries for the Wagman Revolution Rotary System.

This passive planetary rotary processing system turns a power trowel into a floor- or pavement-scrubbing and stripping machine. The new bristle choice is an excellent selection for general scrubbing. It features variable-length 180-grit silica carbide-impregnated bristles. The flexible, tough fiber works well on smooth and uneven surfaces such as architectural concrete.

www.wagmanmetal.com

Diamond tools from Lythic

Lythic Solutions' new Facet Diamond tools for concrete polishing save labor and material costs by working more efficiently and lasting longer than conventional diamond tools. The line includes ceramic-matrix tools that run cooler, last longer, and cut more uniformly than the equivalent grit of conventional metal-bond tools. They can allow a polisher to skip two or three steps.

All Facet Diamond tools use selected synthetic industrial diamonds that are purified by nitrogen implantation to make them less prone to fracturing. They last longer and tend to sharpen themselves as they wear.

The Facet Diamond line includes 30-grit and 50-grit metal bonds for aggressive surface removal, intermediate 100-grit and 200-grit ceramic bonds, and fine 400-grit resin bonds.

www.lythic.net

Hand-held polisher from Superabrasive

Superabrasive has introduced the Lavina 12, a hand-held model for grinding and polishing.

Weighing just 27 pounds, the Lavina 12 is ideal for polishing countertops, stair treads, bathroom floors and walls. It can be used wet or dry and has a driver speed of 900 to 2,500 rpm.

www.superabrasive.com

Coloring and finishing products for polishable overlays

The new AmeriPolish OS suite of coloring and finishing products is engineered to work with fast-curing polishable overlays. Made by American Decorative Concrete Supply Co., the system meets the specific challenges of coloring and polishing self-leveling overlays, creating a true pour-and-polish solution for fast, beautiful, affordable floors.

The AmeriPolish OS system consists of five products. AmeriPolish OS Integral Color is specially engineered for mixing into fast-curing polishable overlays and comes premeasured for easy, accurate dosing. AmeriPolish OS Dyes are nonflammable and penetrate dense overlay surfaces that refuse conventional acetone-based dyes. Both colorants are available in 12 ready-to-use vibrant hues, and custom color-matched tints are also available. OS Dye can be combined with OS Integral Color for maximum color richness.

The line also consists of AmeriPolish OS Densifier, which offers deep-penetration hardening and contains UV stabilizers to protect color, AmeriPolish OS Stain Protector for guarding the richness and integrity of colored polished floors, and AmeriPolish OS Cleaner, which is formulated to clean floors while maintaining original gloss and luster.

www.ameripolish.com

Photo by Stephen Falls

In this test, a polished concrete test panel protected with PolishGuard withstood 15 minutes of exposure to vinegar. The same solution and exposure severely etched a similar but unprotected polished concrete panel.

Treatment protects polished floors from stains and etching

Prosoco's new Consolideck PolishGuard protects polished concrete floors from stains and etching in grocery stores and other facilities subject to spills and traffic.

The water-based, VOC-compliant PolishGuard provides superior resistance to spills of acidic liquids known to damage polished concrete floors, such as vinegar, milk, fruit juices and soft drinks.

www.prosoco.com

PRODUCT SHOWCASE

PROJECT PROFILE

National September 11 Memorial Fountains, New York City

by Stacey Enesey Klemenc

Construction of the National September 11 Memorial was progressing on schedule to meet its target Sept. 11, 2011, grand opening date, when a big problem emerged concerning the twin fountains and reflecting pools built within the footprints where the North and South towers once stood.

After custom-colored 2 1/2-by-2 1/2-foot concrete pedestal pavers were installed, the fountains were filled with water to an operating depth of 18 inches for a trial run — and disaster struck. The pavers didn't look right. The contrast between them and the fountains' Jet Mist granite walls was "architecturally dreadful," says George Reedy, eastern U.S. director of sales for Crossfield Products Corp., the company that manufactures Miracote products.

"They were not the correct shade of dark gray," agrees Nathan Shapiro, senior project manager for the memorial's general contractor, Lend Lease. "They didn't live up to what the architect had in mind."

It was decided that the pools, which were each nearly an acre in size, would have black bottoms instead to better match the granite. "Replacing the pavers with granite would have been rather expensive," Shapiro says, "so we looked into using a coating of some sort."

Photo courtesy of Miracote

Among the products under consideration, Reedy says, were Miracote MPC, a permeable cementitious coating with breathable qualities, and a vapor-impermeable paint specifically made for pools. The products were applied to the concrete pavers and evaluated for about a month. Miracote's blend of polymer liquid and cement-aggregate mix fared better in color quality, ease of application, material cost and drying time.

"There were some significant physical differences between our product and the pool paint," Reedy says. One was time — MPC could be applied, sealed and fully submersed before the paint was chemically cured enough for total immersion.

Reedy says MPC was also chosen

Project at a Glance

Client: National September 11 Memorial & Museum

Construction Manager: Port Authority of New York and New Jersey

Project: Install overlays for the fountains at the new National September 11 Memorial

General Contractor: Lend Lease, New York City

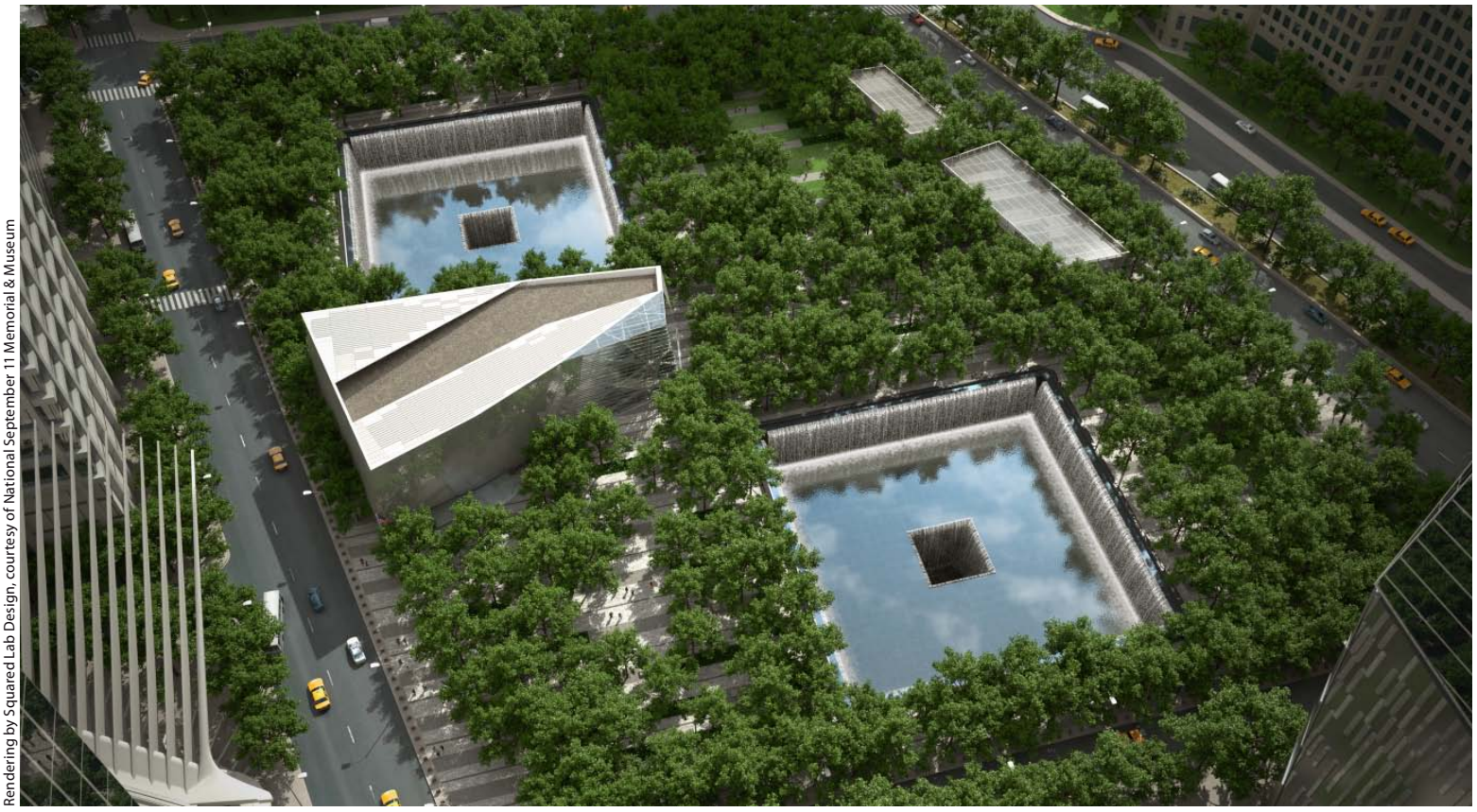
Senior Project Manager: Nathan Shapiro

Architect: Michael Arad, Handel Architects, New York City

Waterproofing Subcontractor: KJC Waterproofing, Dumont, N.J.

Project Specs: Coat the concrete pavers that line the bottoms of the two World Trade Center memorial fountains and reflecting pools with a breathable, waterproof coating that would match the surrounding black polished granite walls

Materials Used: Miracote MPC factory-pigmented black protective coating and MiraGard Drylook Sealer



Rendering by Squared Lab Design, courtesy of National September 11 Memorial & Museum

An architectural rendering depicting a proposed aerial view of the National September 11 Memorial & Museum. **Below**: The real thing, under construction.

because of its moisture vapor permeability, also known as "breathability." The cured protective coating allows moisture to pass through it.

This property was essential as there could be times when the pools would have to be drained for extended periods for cleaning, maintenance or repairs. The concrete pavers were installed on top of a waterproofing membrane that covered the structural concrete slab. When the pavers weren't fully immersed, water would need a way out in its vapor form without subjecting the pavers to potential damage.

Round two

The North Tower pool bottom was coated with MPC in May, and the South Tower pool was coated in June. However, Shapiro says, as the summer wore on, this "fix" made matters worse instead of better.

Due to the construction schedule, the subcontractor, KJC Waterproofing, had initially applied Miracote MPC in sections over three days at different times of the day. "The outcome was a patchwork of varying shades of gray," Shapiro says.

"It was quite visible where each of the three stop-and-start points had occurred," Reedy adds.

The main problem, Shapiro says, was that the subcontractors treated the Miracote product like it was paint instead of a cement-based coating. "Miracote has certain properties that hugely impact the outcome," he says. "We found out it makes a big difference when and how it's installed."

"When you apply this type of product and have owner expectations for ultimate color consistency," Reedy says, "you need a larger crew than what you would need for paint. We recommend applying the coating all at one time and not in sections day to day. And once you roll it, don't roll over it

Photo by Joe Woolhead, courtesy of National September 11 Memorial & Museum

Photo by Joe Woolhead, courtesy of National September 11 Memorial & Museum

again minutes later after it begins to dry or you will see streaking."

A pigmented cementitious coating, he adds, encounters the same weather problems as colored concrete during an install. Climatic conditions that have an impact on the rate of evaporation, such as shade, temperature, wind and humidity fluctuations during the course of a day, can affect its final appearance.

To rectify the off-color problem, Reedy says, the pool bottoms were power-washed — "The product recoats to itself very well" — and an additional coat was applied to both during the first week of September. "This time, to minimize the potential for color variations, each application was performed from start to finish at night after the sun had set when conditions were more favorable," he says. In addition, the liquid catalyst element of the MPC was factory-tinted black.

Thanks to an expanded crew, Reedy adds, each recoat was completed in roughly five hours rather than the 20 or so apiece it took the first time around.

After a two-day cure, Reedy recommended sealing the MPC with Miracote's MiraGard Drylook Sealer, a fluorocarbon-modified siloxane water-repellant penetrating sealer that has no sheen once dry and makes cementitious surfaces more oil- and stain-resistant.

MPC can withstand rain and some water within hours after application. However, "We required a three-day cure prior to filling the fountain and exposing the sealer to full immersion in chemically treated water," Reedy says.

The end results were solid-black bottoms that seamlessly melded with the pools' solid black granite walls — successfully completing the architect's vision of two voids where the Twin Towers once stood.

The National September 11 Memorial was officially dedicated Sept. 11, 2011, and opened to the public the next day.

(201) 384-8859 (KJC Waterproofing)

Photos by Amy Dreher, courtesy of National September 11 Memorial & Museum

Sept. 11 Memorial Honors Loss with "Reflecting Absence" Design

The National September 11 Memorial was dedicated on the 10th anniversary of the horrific event and opened to the public the following day.

Architect Michael Arad, along with landscape architect Peter Walker, designed the memorial to honor the nearly 3,000 people who lost their lives in the Sept. 11, 2001, terror attacks at the World Trade Center, at the Pentagon and in a field near Shanksville, Pa. The memorial also honors the six people killed in the 1993 World Trade Center bombing.

Out of 5,201 entries from 63 countries, Arad's "Reflecting Absence" won out as the design that would most eloquently fulfill the memorial's daunting demands.

Work began on the 9/11 Memorial in 2006. It features twin reflecting pools, each nearly an acre in size, built within the footprints of the North and South tower. Jet Mist granite surrounds each pool and is inscribed with the victims' names, which are illuminated from within at night.

The names of the victims are arranged and inscribed according to a system of what planners call "meaningful adjacencies." The names are grouped in nine categories that reflect where the person was during the attacks. For instance, passengers on the three flights are grouped together, as are employees of the various firms and the first responders. But it doesn't stop there. Colleagues, friends and family are placed alongside each other within the larger nine groups if requested by the victims' next of kin. Planners say it was a complex and painstaking task to honor the 1,200 requests received.

Rows of swamp white oaks surround the pools, with some thriving where the steel support columns of the towers once stood. A series of concrete slabs suspend the plaza over troughs of rich soil that feed the grove of trees. This design offers a stable pavement where people can walk, while incorporating areas of uncompacted soil to promote healthy tree growth.

The 9/11 Memorial is operated by the nonprofit National September 11 Memorial & Museum at the World Trade Center, while the Port Authority of New York and New Jersey oversaw its construction. The memorial and museum, the latter which is scheduled to open later this year, occupy 8 of the site's 16 acres.

www.911memorial.org

The National September 11 Memorial, which officially opened to the public Sept. 12, 2011, features a plaza with trees and twin reflecting pools, each nearly an acre in size, that sit within the footprints where the North and South towers once stood.

Photo by Amy Dreher, courtesy of National September 11 Memorial & Museum

TROWEL & ERROR

Decorative Overlays: The Power Is in the Polymer

by Chris Sullivan

If there is one product family in which a noticeable difference exists between competing products, it has to be the decorative overlay market. Gone are the days where a scoop of cement and bag of sand are mixed with diluted "milk" (slang for liquid polymer). While these basic recipes filled a need in the early days, the industry as a whole has grown up and become more technologically advanced. The variations in application as well as performance range from excellent to mediocre.

Recently I took part in a research and development program to produce some new hybrid overlays. I was able to look at popular products on the market, reverse-engineer them and see what makes them work. It was an interesting exercise that gave me a new appreciation for the complexity of decorative overlays and how they work. One big thing to come out of my research was the importance of a good blend of cements, aggregates and additives, but more critical was the role of the polymer.

Decorative overlays, with rare exceptions, fall into the product family known as "polymer-modified toppings." A polymer is a long molecule made up of repeating structural units. These can be both natural and synthetic. In the case of decorative overlays, we are dealing with synthetic plastic-based polymers. To simplify what can be a complex chemical jungle, we just need to consider polymers used in overlays as "glue" that provides adhesion within the overlay as well as adhesion between the overlay and the substrate.

This glue allows overlays (toppings) to go down thin and still stand up to high levels of traffic and harsh environmental conditions. The industry standard requires regular concrete to go down at a minimum of 2 inches thick. Typical decorative overlay applications range in thickness from 1/32 inch to 1/2 inch thick, which is 25 percent to 65 percent thinner than concrete.

We all (should) know that the large aggregate bound by the cement paste is what gives concrete its strength properties. Since overlays are so thin, they do not have any large aggregate. This is where the polymer comes into play, giving strength to a thin cement-based product — in essence, replacing the larger stone.

There are two common polymer types used by most decorative overlay manufacturers: ethylene vinyl acetate (EVA) and acrylic.

EVA is actually a blend of ethylene acetate and vinyl acetate. Not surprisingly, vinyl acetate's most recognized application is as the main ingredient in Elmer's glue and wood glue. Ethylene vinyl acetate (EVA) comes in both dry powder and liquid emulsion form. This means EVA-based overlay systems can be "wet" or "dry." A wet system is when the polymer is in liquid form, mixed with the powder at the job site. A dry system is when the polymer is a dry additive premixed into the powder and the whole system is activated by adding water.

I always compare EVA to the vinyl booth seats at the local diner when I was growing up. They were bouncy and stretched as I jumped on them, but never tore or ripped. Vinyl is what gives EVA the properties that are so beneficial to both cement-based

PRODUCT NEWS

Ardex Pandomo lines of flooring materials make American debut

Ardex Americas formally introduced the Ardex Pandomo brand to North America at World of Concrete 2012.

Pandomo is a complete system for decorative concrete floors that includes concrete toppings, sealers and maintenance products. The brand was introduced overseas by Ardex Americas' parent, Germany-based The Ardex Group, in 2002.

The Pandomo brand delivers a comprehensive system that addresses substrate prep, maintenance and everything in between. This unique approach to designer floors has won awards from the German architectural magazine AIT.

Pandomo will present the same lines and colors in the Ardex Americas territory that it offers in Europe and elsewhere, plus some additional toppings and sealers. Ardex Americas services North, Central and South America and the Caribbean Basin.

www.ardex-pandomo.com
www.ardexamericas.com

Versatile Building Products offers Lifetime overlayment primer

Versatile Building Products has developed a primer that adheres to concrete while protecting overlayments from failures caused by moisture vapor emissions.

Lifetime Primer is a unique, proprietary epoxy primer formulated to wick deep into the concrete. The deep penetration creates an adhesion bond that will withstand more than 8 pounds of moisture-vapor emission pressure pushing up against it. Lifetime Primer bonds to damp and dry concrete and usually dries in about four hours.

(800) 535-3325
www.decorativeconcretesystem.com

microtoppings and stampable overlays. It makes the cement-based overlay more plastic, flexible and durable, not to mention sticky — like glue. It also gives the overlay a more synthetic, rubbery look, which may not be to everyone's liking.

EVA-based overlay systems make great toppings for projects when protection from freeze-thaw, chemicals, or everyday soils and contamination is important. EVA is the most common form of polymer used in decorative overlays based on its cost-to-performance ratio. If the liquid polymer you happen to use as part of your overlay system smells like the white glue you used in grade school, then it's a pretty good bet it's EVA.

Acrylic polymer used in overlays is different than EVA in that it is only available in liquid form and has a much smaller market presence. It produces a much more rigid and hard-finished overlay product.

In my research I have found that acrylic polymers make for great microtopping overlays for interior applications. Acrylic polymers tend to produce overlay toppings that look and feel much like traditional concrete. You do not have the synthetic look and feel that sometimes comes with the EVA systems. Much like Plexiglas, which is clear acrylic in sheet form, acrylic-based overlay systems are rigid, durable and tough, but are not very flexible. This is why I don't recommend them for projects where flexibility is important.

With all the focus on polymer types and properties, the dry side of decorative overlay systems can get minimized. It is important to note that having the right blend and type of aggregates is as important as having the right polymer. While the polymer is what gives the overlay most of its strength and adhesion properties, it will not make up for a poor mix design on the dry side.

The mix is more than sand and cement. In fact I found some popular overlay systems had no less than seven different dry ingredients, each one adding a nuance or performance characteristic specific to that system.

There are many brands of decorative overlay to choose from, each one unique. I encourage you to do your own research and ask lots of questions to discover if the brand or product you are using is best suited for your specific application. The polymers you use combined with the proper mix of dry ingredients makes products as diverse as the applications you use them for. Don't settle for the one-size-fits-all approach when it comes to decorative overlays.

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.

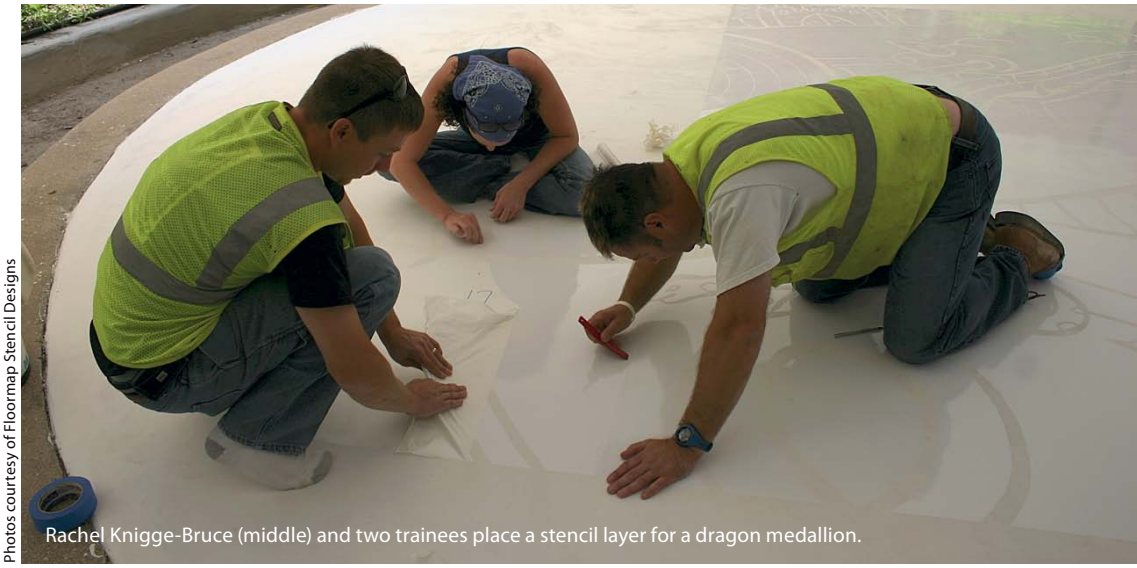
Chris Sullivan will present "Solving the 10 Most Common Finishing Problems" and participate in a panel, "The Greening of Decorative Concrete: LEED & Beyond," at the 2012 Concrete Decor Show. He will also present "The Vocabulary of LEED" at the Green Matters Conference. For more information, go to ConcreteDecorShow.com.

Creating Color Designs with Rachel Knigge-Bruce's Stencils

by Steven H. Miller, CDT

Complex and intricate designs can be applied to concrete surfaces very accurately using adhesive-backed vinyl stencils. They offer control, precision and, if needed, repeatability. Stenciling is a very old technique from the world of paint, but as it evolves in the concrete world, it's becoming very modern, thanks to people like Rachel Knigge-Bruce.

A former graphic designer, Knigge-Bruce is a pioneer in the decorative concrete industry. Like modern painters' stencils, her specially designed concrete stencils are cut out of sheets of vinyl. They can be used with several different methods and coloring media, including dyes, microtoppings, epoxy, overlays, etching and acid stains. Through her company, Floormap Stencil



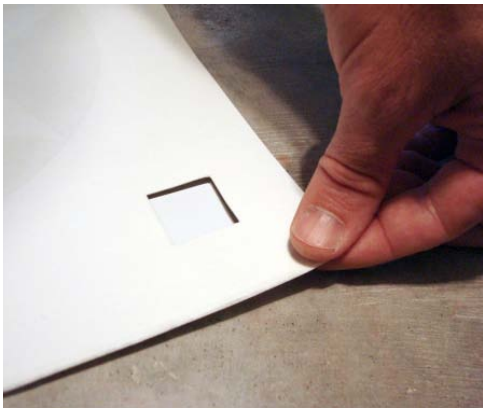
Photos courtesy of Floormap Stencil Designs

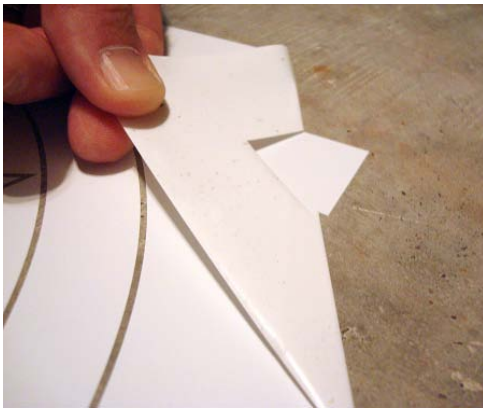
Rachel Knigge-Bruce (middle) and two trainees place a stencil layer for a dragon medallion.

Designs, she offers product, training, consulting and even installation.

Knigge-Bruce is one of the first people to incorporate registration marks in her stencils, similar to the ones used in four-color printing that allow multiple layers to be aligned with high precision. Multilayered stencils enable a person with limited skill at painting or drawing to produce highly intricate, artistic works on concrete.

Also, to prevent color bleeding under the edge of the sheets, her concrete stencils have adhesive on one side, so they can be temporarily sealed to the slab surface. This





The registration marks of Floormap stencils allow the user to align different layers with absolute precision.

also makes it possible to block out isolated objects in a pattern.

Stencils were previously available only with all the elements of the design on one stencil, explains Knigge-Bruce. "You would manually pull parts of the design, apply color and remask before continuing the same process to other areas. This really limited what you could do and was very labor-intensive. There were some multilayer stencil sets, but they were hard to align effectively."

Her stencils can be put down on top of

each other to make a more complex pattern. "The registration marks are built into the first layer of the design. After applying the color medium to the exposed surface area, you remove the layer — leaving the registration marks in place. All additional layers have a corresponding 'window' that allows the user to accurately align the next layer of the design."

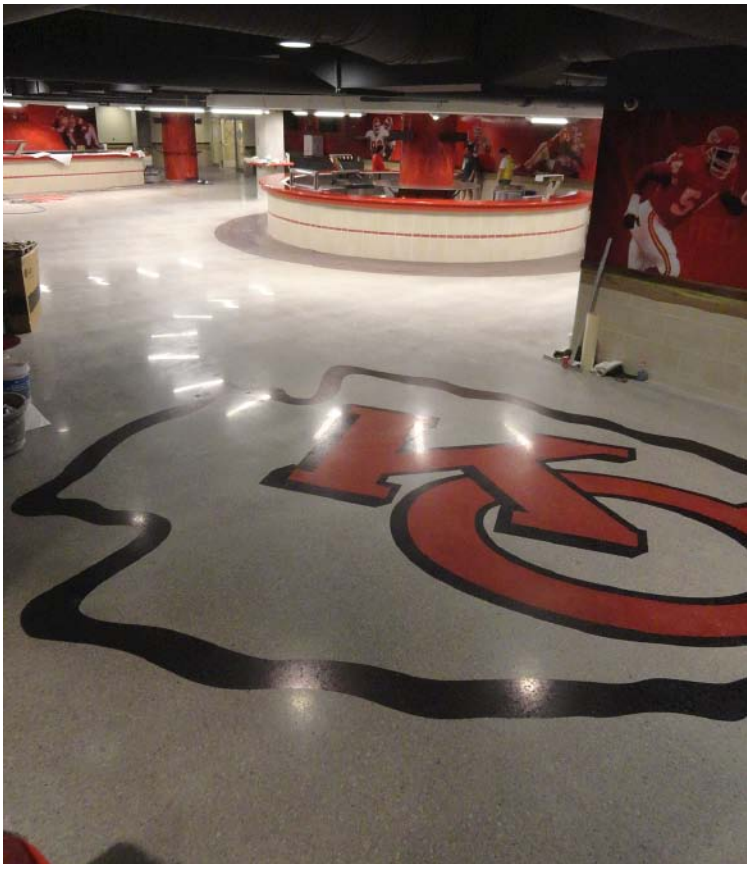
This process can be repeated with three, four, five, or more layers, building up the design with great accuracy.

The artist can execute very tight designs, laying colors right up against each other without gaps or overlaps.

Application techniques

Each stencil is built with three pieces: the adhesive vinyl, with the design cut in place, is sandwiched between backing paper on one side, to protect the adhesive, and transfer paper on the other side to hold all the pieces of the vinyl design in place until it is adhered to the surface area.

Two students in a training session learn how to create large designs using multiple stencil panels.



Once the layer is placed and aligned in the desired location, the user will stabilize the panel with blue painter's tape. The backing paper is removed, exposing the adhesive side of the vinyl. The stencil is then carefully applied onto the concrete using a specially designed squeegee made for vinyl application. The transfer paper is then stripped from the design, leaving just the vinyl mask and open areas that will receive the color.

Application is speedier than it sounds. According to Knigge-Bruce, stencil-making is the bigger time-consumer. "The Kansas City Chiefs logo, at 20 feet by 17 feet, was only two layers, but it took me about two days to make the stencil. It only took seven or eight hours to apply. That's the beauty of the stencil system. It takes the guesswork out, so you can do something incredibly complex, incredibly cool, on a big scale, in a very timely manner."

Multilayer stencils make it possible to execute intricate work without drawing or painting skills.

How to do 3-D

Three-dimensional illusions often involve multiple shades of a single color of translucent solvent-based dye. A unique stencil arrangement is used to achieve them.

First, areas of each shade are numbered for identification. Then, Knigge-Bruce will start pulling all of the areas that take the darkest shade of the color. The remaining shades of that color are cut into

Rachel Knigge-Bruce used multilayered registered stencils and translucent solvent-based dye to create this design. This one is in Rolla, Mo., and she's done it elsewhere too.

the same layer, but are not removed at first.

After applying the darkest shade, the cut-outs for the next lighter shade are stripped out so the user can apply dye to single areas or small groups of areas according to the numerical order. The varying shades are achieved through different dye dilutions. Overspray onto the darker areas will only enhance them, so they don't have to be remasked.

More tips

Knigge-Bruce advises using her methods on smooth surfaces: polished, ground or tightly troweled concrete, or self-leveling cementitious overlay. Microtoppings are very porous, so you have to be extra careful not to overapply colorant to prevent bleeding, she says. "Troweling microtopping material over the stencil to create embossed or reverse embossed designs can produce a very unique effect."

Broom-finished slabs require the use of a different vinyl employing a much more aggressive adhesive. Likewise, if there are pockmarks or spalls in the concrete, it will be difficult to mask well. "Generally, I'll use a blow-dryer to make the vinyl more pliable. Then I can press it down into the crevice and get good adhesion, preventing bleed."

She cautions beginners to test a slab's acceptance of colorant before laying down the stencil. "The stencil is a one-use item. If you apply colorant, pull up the stencil, and then find out the colorant didn't penetrate, you're stuck."

On a fully polished slab, the stencil is most commonly applied after either the 400-grit or 800-grit polishing steps, she says.

The biggest mistake beginners make in stenciling, she observes, is rushing the stencil application. "Be patient. If you don't apply the material correctly, you'll get creases and folds, and then the registration of other layers won't line up. The vinyl has to be laid down absolutely flat. Take the time to get it right."

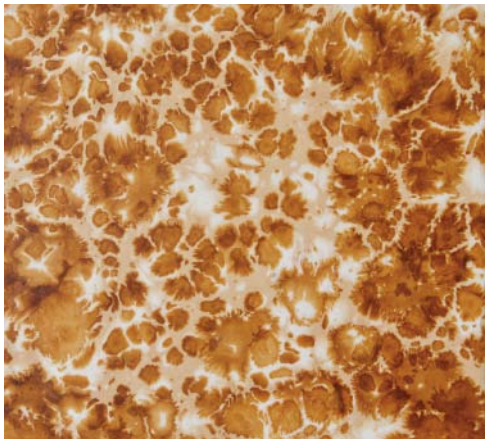
Rachel Knigge-Bruce will present "The New Era of Decorative Concrete Stenciling" at the 2012 Concrete Decor Show. For more information, go to ConcreteDecorShow.com.

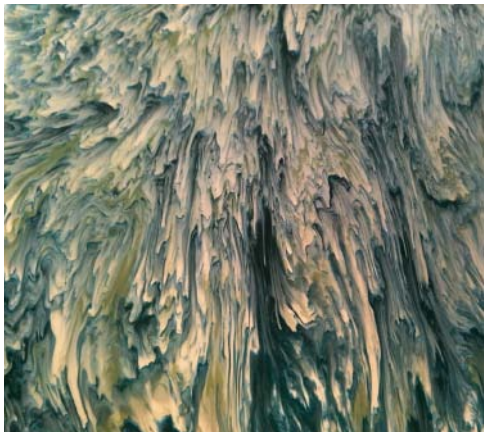
PRODUCT NEWS

Dazzle Effects from Westcoat

Westcoat has launched Dazzle Effects, artistic treatments utilizing Westcoat's popular EC-38 Liquid Dazzle to create colorful, dynamic, unique floors.

Dazzle Effects are application techniques that uses Liquid Dazzle as a base. Dazzle is manipulated with a variety of specialized processes that splatter and swirl material into the base before it has fully cured. The result is dramatic, unique looks offering a multitude of design opportunities, ranging





from a colorful mottled or hammered appearance to a more organic look reminiscent of wood burl.

Westcoat EC-38 Liquid Dazzle is a popular, durable epoxy floor-coating system engineered with proprietary metallic additives that flow uniquely when applied. Liquid Dazzle produces a hardy, dynamic, color-changing custom floor in a glossy or matte finish. It is available in 18 standard colors.

www.westcoat.com

New heavy-duty acetone sprayer

H.D. Hudson Manufacturing Co. has developed a new, heavy-duty 2 1/2 gallon acetone sprayer.

The tank comes with a pressure relief valve and a 60-inch hose with a bendable 18-inch brass wand and two nozzles.

www.hdhudson.com

PROJECT PROFILE

iPlay America
Freehold, N.J.

by Natasha Chilingerian

When Bob McDaid began making plans to build iPlay America, his 115,000-square-foot indoor family amusement park in Freehold, N.J., he envisioned flooring to complement two very different settings. On one side of the park, he wanted a boardwalk that would remind guests of playing arcade games and munching cotton candy on the famous New Jersey shore, and on the other, a worn asphalt road that would help depict a Tuscan village scene.

So McDaid decided to seek a highly skilled decorative concrete artisan who could replicate both asphalt and wooden boardwalk planks on the facility's floors using textured concrete coatings. (Due to state regulations, installing real asphalt indoors was out of the question.)

Photos courtesy of H&C Decorative Concrete Products

Enter Andre Garrote, decorative concrete manager for Chesterfield, N.J.-based Prendergast Landscape Contractors Inc., who met McDaid through a mutual friend, a masonry artisan. Garrote began submitting textured floor coating samples to McDaid and Jon House, iPlay America's construction manager. Eventually, they settled on a game plan for the floors in each themed section of the amusement park.

The park's Boardwalk and Midway would be imprinted with a wood plank stamp, the Grand Lobby would feature a European Fan stamp pattern, and the City Square, Broadway and parts of the Grand Lobby would be treated with a spray texture product, chiseled and stained to duplicate asphalt — a process Garrote worked out after much trial and error.

"Bob wanted to create a New Jersey boardwalk on one side of the park and he wanted the other half to look like an old worn road," Garrote says. "So it was my job to recreate this using decorative concrete materials and to make it look as realistic as possible."

Garrote and a crew of five to six men began the six-month installation process in late May 2011. First, they treated the

Project at a Glance

Client: Bob McDaid, iPlay America, Freehold, N.J.

Decorative Concrete Contractor/Designer: Andre Garrote, Prendergast Landscape Contractors Inc., Chesterfield, N.J.

Project Specs: About 50,000 square feet of textured decorative concrete floor coatings

Timeline: Six months

Material Suppliers: H&C Concrete, Proline Concrete Tools

Materials Used: H&C Concrete Stampable Overlay, Broom Finish Repair, Heavy Traffic Resurfacer System, and Semi Transparent Decorative Stain in Obsidian and several custom blended shades; Proline Concrete Tools stamps in Boardwalk Wood Plank, European Fan, Appian Cobble Stone and Seamless Italian Slate

structure's existing concrete slab, where a grocery store, hardware store and Kmart once stood, with a heavy-duty planetary grinder. To create the boardwalk surface in the park's Boardwalk and Midway areas, which contain carnival games, rides, benches and picnic tables, they coated the floors with H&C Concrete's Stampable Overlay and stamped them using Proline Concrete Tools' Boardwalk Wood Plank stamp. Workers mixed up the directions of the stamped planks to create natural irregularity, and they imprinted a few "king boards" using large, individual wooden board stamps, also from Proline Concrete Tools, to create the illusion of walking from a boardwalk onto a pier where the rides are, Garrote says.

"The wood planks give me the greatest satisfaction, when I hear everyone who walks on them asking themselves, 'Is this real wood?'" Garrote says.

Recreating asphalt using decorative concrete materials in the park's City Square, Grand Lobby and Broadway areas, which feature charming brick structures, shops, benches and trees, posed the biggest challenge for Garrote. First, he experimented with paint chips mixed into an epoxy material and stamping with various stamps, but neither technique led to a realistic result. So he called his original stamped concrete trainer, whom he hadn't spoken to in years, for advice, which also led him to a dead end. Finally, Garrote applied a spray texture product that gave him the

results he desired.

He used H&C Concrete's Heavy Traffic Resurfacer System in charcoal and grey colors, which gave the appearance of embedded stones in the material, as well as in a sand color to make the "asphalt" look dirty. Four workers then spent three days creating cracks in the surface with chisels and hammers. Garrote says that during this process, he ran outside more than a few times to look at the cracks in a real asphalt surface, then ran back inside to recreate them with his hammer and chisel. To make the cracks look more realistic, he applied the Obsidian color of H&C Concrete Semi Transparent Decorative Stain into each one using a small paintbrush.

"This was a true custom creation," Garrote says of this difficult process. "You can't open a book to learn how to do it, and believe me, I tried."

Several areas of the decorative concrete "asphalt" include patches of overlay material stamped with Proline Concrete Tools' Appian Cobble Sone stamp, which Garrote says creates the illusion that the asphalt is so worn that the cobblestone has started to come out from underneath. "We left these areas so irregular that you can't see a transition between products. They look completely realistic."

The indoor imitation asphalt surface runs into an authentic, outdoor asphalt surface at the base of a park delivery door, and Garrote says the two surfaces blend together perfectly.

"It's amazing to not be able to tell the difference between the two," he says. "That's one of my favorite aspects of the job."

In the park's Grand Lobby, where McDaid requested an elegant, European courtyard look for the floor, Garrote used Proline Concrete Tools' European Fan stamp over H&C Concrete's Stampable Overlay. This area was stained in a silver grey as a base color and highlighted with a charcoal hue using a custom blend of H&C Concrete's Semi Transparent Decorative Stains. Garrote also chose a fourth stamp, Seamless Italian Slate, to enhance the floor of the City Square Grill, an elevated café located in the Grand Lobby.

On sidewalks and curbs throughout the facility, Garrote and his crew applied H&C Concrete's Broom Finish Repair, allowed it to cure and created expansion joint lines using a quarter-inch diamond blade on a hand grinder.

iPlay America opened to the public on November 11, 2011, and Garrote and McDaid think most visitors believe they are walking on wood, asphalt and stone — not concrete.

"This type of project means so much to me," says Garrote. "My favorite thing to do is watch people's reactions to seeing the floor. Even someone on a local radio station couldn't stop talking about the floors. They couldn't believe they were made from concrete."

McDaid says he's thrilled with the floors' realistic appearance. What's more, he admires Garrote's commitment to perfection and willingness to work long hours throughout the construction phase.

"He could have taken a lot of shortcuts, but instead, he paid a lot of attention to detail and had no problem doing more work," McDaid says. "People will come in and walk on the boardwalk, and it feels lumpy and bumpy like a real boardwalk would. You can paint a surface to make it look like a boardwalk, but since ours has grooves in it, it seems very real."

www.prendergaststampedconcrete.com

PROJECT PROFILE

Lobby at Amazon.com Headquarters
Seattle, Wash.

by Stacey Enesey Klemenc

The main lobby of the newest building at Amazon.com's headquarters campus in central Seattle is definitely one for the books. Rows and rows of simulated shelved books crafted from glass-fiber reinforced concrete (GFRC) line 1,500-plus square feet of the first-floor entrance and corridors, reflecting the Web-based megaretailer's humble beginning as an online bookstore.

Originally, Kurt Nelson, the project's interior architect with Callison in Seattle, specified traditional precast concrete panels to line the walls from floor to ceiling, but he soon found out they would be impractical. Not only would the weight of the 175-plus panels pose a support problem, but the cost would push the project way over budget.

He conferred with Steve Silberman, president of Absolute ConcreteWorks LLC, Poulsbo, Wash, who proposed using ACW's SoundCrete GFRC mix to cast the three-dimensional panels. This GFRC mix, Silberman says, would reduce the weight of the proposed panels by 25 percent or more, which would make them less labor-intensive to install and more economical overall.

Photos by Roger Turk, Northlight Photography

The ACW team understood the designer's needs from the get-go, says Nelson. "The high strength and lower weight of these panels reduced the cost of the installation to within budget requirements," he notes. Another extremely important issue, he says, was the desire to maintain "tight tolerances" between panels, keeping the spacing between them equal and consistent.

They also wanted "a high level of detail, not only on the flat faces but on panels that wrapped corners, while maintaining a seemingly random pattern," he says. "We were able to succeed in all of these areas."

Project at a Glance

Client: Amazon.com Inc.

General Contractor: GLY Construction, Bellevue, Wash. (Jim Metzger, project manager)

Interior Architect: Kurt Nelson, Callison, Seattle

GFRC Wall Panel Fabricator: Absolute ConcreteWorks LLC, Poulsbo, Wash.

Wall Panel Structural Engineer: B2 Structural Engineers, Seattle

Project Specs: Construct precast concrete panels that look like evenly spaced shelves of randomly placed books for the main lobby of a new building at Amazon.com's headquarters campus in Seattle.

Materials Used: GFRC, wood and fiberglass molds, oversized glass bookmarks, lots of sweat

Creating the molds

To make the pattern of the shelves of books appear random and to maintain tight tolerances between the panels, ACW created molds for 16 different panel variations, using either wood or fiberglass.

"We had to create enough molds to produce 80-plus of one panel in a short time," says Chris Karlik, a fourth-generation sculptor and the ACW mold maker in charge of building the forms.

He made 12 identical reusable fiberglass molds, the insides of which he coated with a special gel-coat made with polyester resin and calcium carbonate using a passed-down family recipe.

The outer fiberglass layer extends the form's life and makes it more durable for the long term, he says, while the inner gel layer is essentially sacrificial. "This allows me to go back and rework the casting surface if the form develops a facial defect, out-of-square corners or gets damaged," he says. "I don't have to create a whole new mold." A properly made form, he adds, should last for 80 to 100 casts.

Short-run molds, which can only be used once, were made by hand from CNC-cut poplar. The ACW crew crafted anywhere from one to four of each short-run mold, with the majority of these used to make panels to wrap the corner of the main lobby.

Putting up the panels

After the panels were released from their molds, they went up whole without any cutting to fit, says Karlik. "They had to perfectly cover the wall space as designed without the need for alteration. For the designer's 'big picture' to work, every one of the individual pieces had to install and fit precisely as prescribed."

The goal was not a seamless fit, Karlik adds, but rather to keep the spacing consistent between all the panels.

ACW worked closely with the general

Photos courtesy of Chris Karlik

contractor, GLY Construction, and B2 Structural Engineers to select Brooklyn Hardware's interlock clip, a Z-clip often used commercially to mount signs, to secure the panels. "We were not able to screw the panels to the supporting light-gauge metal structure behind them, and we also needed some adjustment so that the panels could line up properly during installation," says Basri Basri, P.E., S.E., principal of B2. "To prevent the interlock from loosening up during seismic events, the clips were glued together with epoxy adhesive."

Basri also notes they used light-gauge metal studs instead of wood framing because the more rigid studs are less affected by temperature movement. "They provide better panel alignment and maintain a quarter-inch gap between the panels," he says.

Getting the color right

The GFRC panels were made at ACW's facilities between August 2010 and January 2011. This timeline was the crew's biggest challenge.

"Production was not the problem," Karlik says, "but adequate time for curing and surface drying was. When the project began (in the research and development phase), it was summer and the pieces dried evenly and quickly." But the project didn't get into full swing until fall and early winter.

"The panels produced later were not getting to the final lightened color as quickly as the earlier panels," says Mark Venezia, ACW's production manager, who oversaw the mix design and casting process. The different temperatures, humidity levels and atmospheric changes that spanned the production cycle affected the curing process and, subsequently, each panel's natural gray portland cement coloring.

The project team approached this problem from several angles. "First, we rearranged our shop to accommodate better airflow across the panels and maintained a consistent room temperature," Karlik says. On the job site, GLY kept the casts in a heated room to help with the drying.

Not unexpectedly, after the panels were installed, the team made several trips to the job site to do the final cosmetic blending and detailing, Venezia says. They combined a natural-colored cement mix with water to get a peanut butter consistency, using the mixture to fill voids and balance out the overall gray tones.

Nelson, the architect with Callison, says when he accompanied the designer through the completed project, the designer was "genuinely thrilled with the execution of the final product and how it completely incorporated his earliest design concepts and brought them to fruition."

Nelson notes that it was a long process from the initial conversation to the final product, but one that was worth it. "Our collaboration was creative, informative and ultimately a mutually rewarding expertise delivering a LEED Gold building."

www.absoluteconcreteworks.com

PRODUCT NEWS

Spray hopper from Benron

Benron Equipment & Supply Inc. has released a hopper made from stainless steel material. It features a slide-out, four-hole spray-tip plate and four removable stainless steel air-jet nozzles. The hopper sprays sand and cement slurries, grout, GFRC and more.

www.benron.com

Sollos Landscape Lighting releases a light for posts and deck rails

Sollos Landscape Lighting has introduced their Deck/Post Light, an ideal way to enhance low-level area lighting for decks, patios, gazebos and other landscapes.

Surface-mounted on posts, deck rails and block walls, this architectural-grade aluminum fixture is designed to withstand nearly every outdoor environment. A silicone O-ring between the fixture cover and housing provides a watertight seal, preventing water, insect and debris entry. Dual-set screws simplify precise mounting, and the frosted lens diffuses the light and gives it a smooth glow.

This versatile fixture operates both halogen lamps and long-lasting LED lamps. The lights are available in Textured Black and Textured Bronze finishes.

www.solloslighting.com

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KNOXVILLE, TN – On the bottom left section of a relatively unknown website, there are 4 tabs that could mean less stress and added profits for concrete contractors nationwide.

You've Got a Friend in Tennessee may sound more like a tourist claim than a business idea, but for one supplier, the tag line fits just right. The supplier, Braxton-Bragg, has been a friend to stone fabrication shops since 1995. Now, they have teamed up with Diamond Products to change the way concrete contractors get their supplies and tooling.

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