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July 2019
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Publisher's Letter

Dear Readers,

These are exciting times in the life of the decorative concrete industry. The economy is strong and job opportunities are abundant. Because decorative concrete includes applications for both new and existing concrete — in addition to applications that constantly challenge traditional building solutions — there are no less than a dozen ways it can be used on commercial or residential projects.

Concrete Decor recently renewed its membership with the American Society of Concrete Contractors/Decorative Concrete Council for some important reasons. One is helping to drive a stronger message of safety. Another is our need to connect with industry experts who want what is best for their industry. Still another is to find ways *Concrete Decor* can help others better understand and experience the value ASCC/DCC delivers.

Personalities and perspectives are constantly clashing in our industry with *Concrete Decor* no exception. When some folks irritate me, I have to remind myself that while my ideas and opinions are important, so are everyone else's.

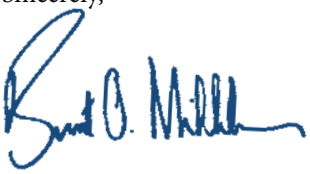
Realizing that being right or the best at something is not really the stuff that creates industry. It's having the ability to listen to others and feeling as though we have a safe place to share our thoughts and ideas. I know my wife is nodding her head and thinking, "Finally!" right now, even though she doesn't know what I'm writing about.

However, the stuff that keeps our industry together and moving in a good direction is each of us recognizing that we're happier and better equipped to meet business and life challenges when we have friends that understand our challenges and can offer their experience and insights. That's a part of my membership with ASCC/DCC that just seems to get better with time.

I encourage our readers to look into what an ASCC/DCC membership can offer both personally and professionally. You'll find many longtime members at the Concrete Decor Show this fall in Arlington, Texas. They're a pretty classy group of men and women who always have others' best interests at heart. After 20 years of publishing *Concrete Decor*, I can tell you with certainty that's what makes and keeps this industry strong.

Enjoy this edition of *Concrete Decor*. While its pages are few this month, its content represents people who care about you and the industry we all serve.

Sincerely,



Bent Mikkelsen
Publisher

On the cover: As part of one of Makaira Landscape's residential jobs in Baton Rouge, Beyond Vertical Concrete used #4 steel rebar and 8-inch mats quick sprayed with a vertical ad mix to create this rock formation around a grotto that can accommodate 10-14 people. All the steel was hand bent.

Photo courtesy of Beyond Vertical Concrete

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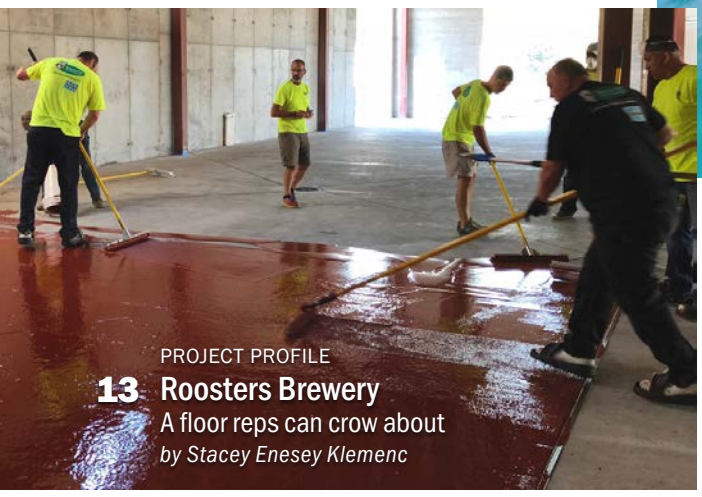

EXPERTS

Earl Choate *is the CEO and founder of Concrete Camouflage, an e-commerce company based in Missouri that designs and markets its own proprietary concrete staining supplies. He can be reached at earl@concretecamouflage.com or (800) 650-1157. See Earl's article on page 10.*

Patrick Hogan *is the CEO of Handle, a company that builds software which helps contractors, subcontractors and material suppliers secure their lien rights and get paid faster by automating the collection process for unpaid invoices. He can be reached at info@handle.com or (800) 845-0625. See Patrick's article on page 8.*

David Stephenson, *based in Dallas, Texas, is president of Retail Polishing Management, a large national flooring installer. He can be reached at david@the-rpm-group.com. See his column, "The Polishing Consultant," on page 28.*

Chris Sullivan *is vice president of sales and marketing with ChemSystems Inc. and a member of the Decorative Concrete Hall of Fame. He has led seminars and product demonstrations throughout North America. Reach him at questions@concretedecor.net. See Chris' column, "Concrete Questions," on page 26.*

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Drill/drivers pack smart features in small package

A compact tool shouldn't mean fewer features or less power. The Bosch GSB18V-535C 18V EC Brushless Compact Tough ½-inch Hammer Drill/Driver and Bosch GSR18V-535C 18V EC Brushless Compact Tough ½-inch Drill/Driver prove small packages not only pack a serious punch, but also deliver on next-generation job site technology.

The hammer drill/driver and drill/driver combine advanced user control with a compact, powerful cordless tool. The tools feature Bluetooth connectivity that links them to the free Bosch Toolbox App, available at the Apple App Store or the Google Play Store.

The app works with a mobile device to provide enhanced tool control and detailed tool usage feedback, including battery charge status. Users can customize the tool, which includes changing the KickBack Control sensitivity and adjusting the time the LED remains on after trigger release.

The Kickback Control is an integrated acceleration sensor that limits tool rotation by detecting sudden movement and shutting down the motor. The feature mitigates injury risk in bind-up situations.

Both tools offer an efficient, maintenance-free EC brushless motor that produces enough torque for tough driving and drilling applications around the job site. The tools have two speed settings — one for high-power tasks (0-600 rpm) and one for high-speed drilling (0-1,900 rpm).

For more accurate fastener driving, reduced overtightening and less cam out, the tools have a precision clutch with 21 settings. Not only will the user have fewer damaged screw heads, but there's less wear and tear on the tool components.

The drill/drivers feature an all-metal chuck for increased durability, an ergonomic grip zone for better handling and a longer belt clip for a more secure hold. Battery and charger are sold separately.

www.boschtools.com
(877) 267-2499

New engineered cement has multiple uses

Imperial Core Bond, the latest industrial-grade engineered cement from Kingdom Products, is a multiuse polymer-modified cement-based product designed to be used as a basecoat over EIFS applications and mortar substrates.

The new engineered cement can also be used as an adhesive for applying premanufactured, lightweight stone veneer. When used in conjunction with ¾-inch AR glass fiber, it can serve as a structure coat over irregularly shaped foam-core designs. It can be used to bond foam to foam, foam to masonry or masonry to masonry.

www.kingdom-products.com

10-inch cordless/corded table saw debuts

Metabo HPT, formerly Hitachi Power Tools, has introduced the industry's first 10-inch MultiVolt Table Saw that can be operated cordless or corded.

The MultiVolt model C3610DRJQ4 can accept a 36-volt MultiVolt battery or plug into an outlet with an AC adapter that can be used over long extension cords or from a generator with little to no power loss.

The table saw offers a working table size that measures 28 ¾-by-22 inches with an out-feed support of 28 ¾-by-2 inches for additional material support. With its telescoping table extension set up on the right, it can support a max of 35 inches rip capacity and 22 inches when set on the left for maximum flexibility.

The saw, which weighs 67.3 pounds, features a 36-volt DC brushless motor with a soft start function that reduces noise and recoil at startup. It also offers an electric brake that halts the rotation of the blade within seconds for added safety and overload protection that automatically shuts off the motor in a possible current overload situation. A dust port at the rear of the cabinet can be connected to a shop vac or dust collection system.

www.metabo-hpt.com

Line adds decorative waterproofing solutions

The SunLastic line by Sundek has taken the proven and reliable technologies of synthetic rubber emulsions and paired it with Sundek's decorative concrete coating systems.

The single-component SunLastic WP50 forms a monolithic, tightly adhering and molded waterproofing membrane which effectively blocks out water across floors, up cove bases and along curbs. For decorative finishes, WP50 can be top coated with Sundek's extensive line of decorative concrete coatings, including Sundek's new SunLastic EPC35.

The SunLastic EPC35, a two-component cement-based overlay with exceptional flexibility and crack resistance, is a great option for projects where traditional overlays may be too hard or vulnerable to cracking.

The combination of these two products reduces reflective cracking caused by dynamic substrate movement. For high-traffic areas, reinforcing fibers can also be added to the mix.

www.Sundek.com
(877) 478-6335

Versatile repair mortar has wide use

ChemMasters Inc. recently released ChemPatch RS, a versatile single-component cementitious repair mortar for a wide variety of horizontal, vertical and overhead repairs to concrete substrates. It's specially formulated to produce a light color concrete mortar that blends well with surrounding concrete, with accelerated set and high early strength.

It can be used to create a smooth, broom, float or trowel finish. It may be shaved or molded to match substrate contours, eliminating the need for formwork. It contains no added gypsum.

The mortar may be used to repair interior or exterior precast panels, steps, columns, beams, concrete pipe and silos, or surface blemishes such as snap-tie or spreader holes, cracks and honeycombs in formed walls.

Based in Ohio, ChemMasters is a 60-year-old manufacturer of specialty concrete chemicals used to improve, repair and protect concrete and masonry.

www.chemmasters.net
(800) 486-7866

New RH system consolidates testing, making process easier and more reliable

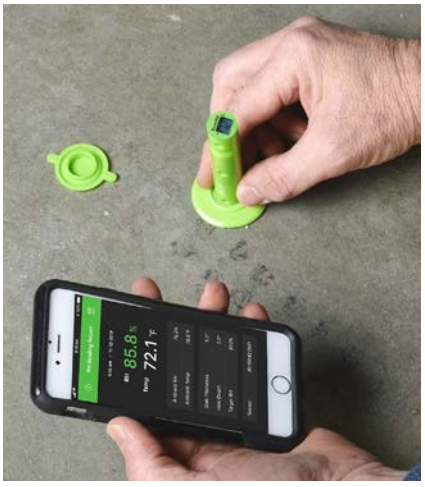
WAGNER Meters introduces the Rapid RH L6 system, an enhanced version of the already popular Rapid RH system. The new version consolidates many concrete moisture testing features into a simpler process while featuring advanced technology that makes reporting faster, easier and more reliable, even in concrete with higher relative humidity (RH).

"We listen to our customers," says Jason Spangler, flooring division manager for Wagner Meters. "They told us they needed more responsiveness in high RH and a more rugged design. We've delivered, along with the biggest advance in technology ever in the Rapid RH system. And just to change it up a little, we finally said goodbye to orange and made everything green!"

The new L6 Smart Sensor incorporates an enhanced design capable of providing concrete moisture readings up to 100% RH. In addition, each L6 sensor includes an onboard memory device capable of storing 512 time-stamped measurements.

Whenever a measurement is made, the sensor will store the reading inside a FIFO (first in – first out) circular buffer. If measurements exceed 512, the oldest measurement is replaced with the newest. Since the time-stamped readings are recorded and saved with each sensor, it's possible to come back years later, retrieve an embedded sensor and recover the historical data.

Photos courtesy of Wagner Meters



When transferring sensor data to the newly updated DataMaster L6 app on your smart device, the number of readings that can be stored is only limited by the storage capacity of your smart device. This new integrated data storage capability will make it easier in the future to prove your readings' validity.

The new all-in-one Total Reader builds upon the foundation of rugged reliability and accuracy of the Rapid RH Smart Reader and Easy Reader, combining their features into a single, easy-to-use device. The Total Reader instantly reads and displays RH and temperature data from the Smart Sensors. When using electronic reporting, the Total Reader will transmit, via Bluetooth, to Wagner's free DataMaster L6 recording and reporting app. (Please note that the enhanced design makes the unit incompatible with Smart Sensors released before L6.)

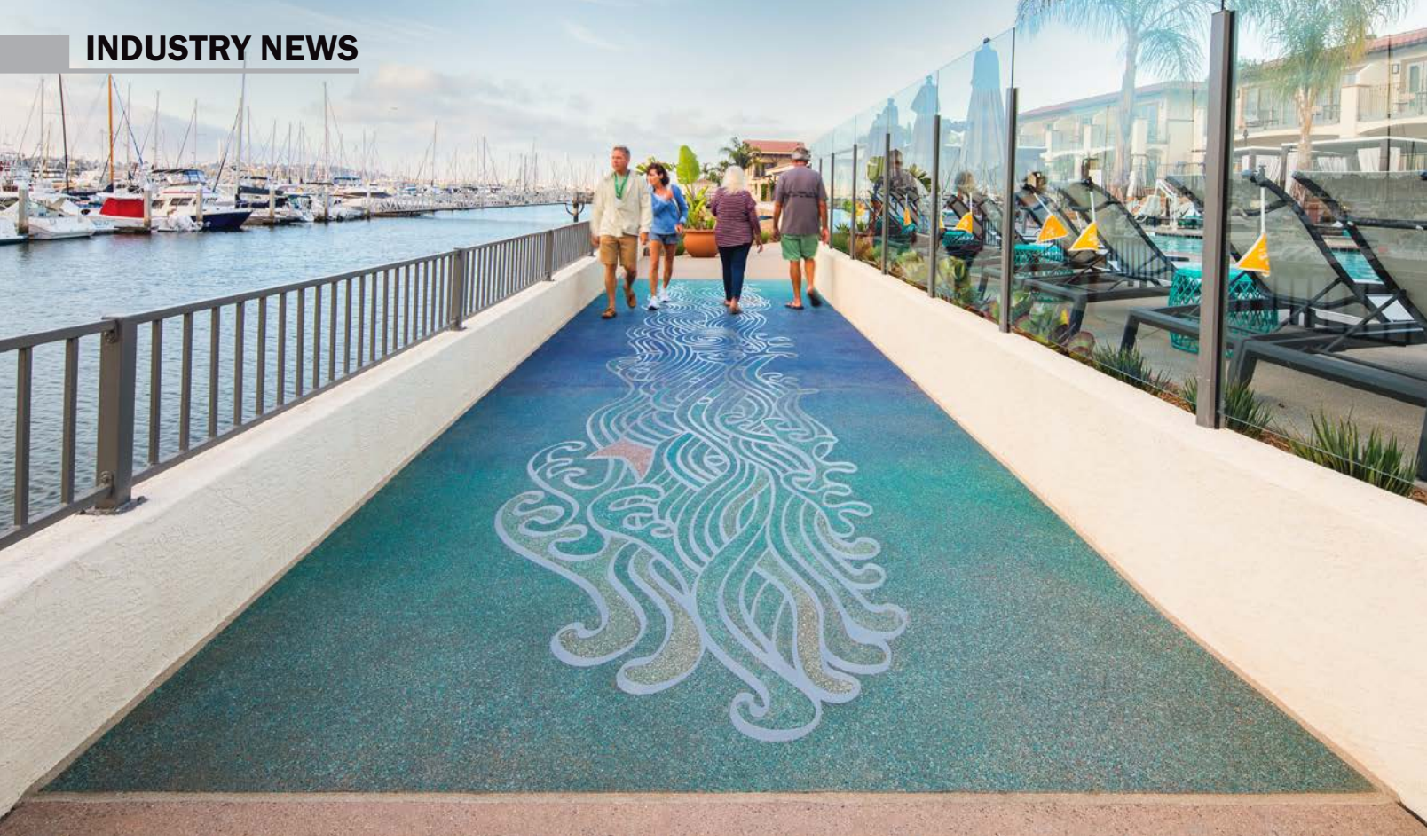
The DataMaster L6 app helps you manage and report your concrete RH testing data inside a simple, user-friendly interface that runs on both Android and iOS devices. It allows the user to input specific information like job name, address and hole depth. The app can store blueprint pictures that can be used to create an overlay of the moisture sensor test-site locations. Moisture readings can then be saved to the specified locations on the picture.

With this app and the complete L6 system, each reading is tied to a specific sensor in the concrete to minimize the chance of mixing up or losing data.

The app also generates reports in PDF format that can be sent to the client directly from your device and stored or transferred to other devices.

A complete data collection, storage and reporting system that quickly provides comprehensive data, "The Rapid RH L6 system enables the fastest, simplest-to-use testing for ASTM F2170 compliance," says Spangler.

www.wagnermeters.com
(800) 634-9961



This boardwalk at the Kona Kai resort in San Diego netted T.B. Penick & Sons a second-place win in the 11th annual competition sponsored by the American Society of Concrete Contractors Decorative Concrete Council. The category was Cast-in-Place Special Finishes, Under 5,000 Square Feet.

Photo courtesy of American Society of Concrete Contractors

Decorative Concrete LIVE! 2020 Concentrates on Crafting Colorful Cityscapes

THE fourth annual Decorative Concrete LIVE! will continue to showcase innovative construction applications for residential and commercial contractors at the World of Concrete in Las Vegas Feb. 4-7, 2020. In 2019, more than 5,000 attendees interacted with artisans, product experts and designers to learn the most current trends in decorative concrete construction.

Exploring the theme "Crafting Cityscapes," Decorative Concrete LIVE! 2020 will show attendees designs, techniques and materials that can be used to transform outdoor urban spaces into colorful, vibrant contributions to communities.

"Urban planners are combining colorful surfaces and textures with innovative shapes and structures to bring new life to their communities," says Bent Mikkelsen, organizer of Decorative Concrete LIVE! and publisher of *Concrete Decor* magazine. These innovative elements include planters, pedestrian crossings, vertical spaces, water features and walking surfaces.

"Decorative Concrete LIVE! will demonstrate how designers and contractors can incorporate surface treatments, exterior claddings and texturing techniques to achieve an architect's vision of a cityscape," he continues.

Mikkelsen and his team are conferring with several design experts on the final layout. Several applications under discussion include:

- Using insulated concrete forms to build vertical substrates for economical and durable innovative surface treatments.
- Constructing urban water features.
- Placing textured walking surfaces that comply with current ADA requirements.
- Selecting exterior coatings that bring color to standard concrete.
- Forming curved surfaces with new technologies such as fabrics.
- Building concrete structures such as benches, tables and play areas.

"Decorative Concrete LIVE! allows the concrete community to come together to demonstrate the material's versatility when combined with the artisan's skill. We will also be showing concrete's role in building resilient and sustainable communities," says Mikkelsen.

For more information on how you or your company can become involved with Decorative Concrete LIVE! at World of Concrete in 2020, call (877) 935-8906.

KNOW HOW TO PROCEED:

The Concrete Contractor's Guide to GETTING PAID

by Patrick Hogan

NOT getting paid is every contractor's worst nightmare. Most will agree there's nothing more frustrating than not getting paid the amount you duly earned.

There are plenty of reasons why some clients fail to pay. For example, if owners or general contractors are experiencing financial issues, they may not be able to compensate contractors. In addition, clients may also intentionally withhold payment, especially if they think the decorative concrete project wasn't done according to the standards stated in the contract.

Whatever the reasons may be, it's important that you take the right steps to exercise your right to get paid. Here are some ways you can ensure that you get paid on time and in full.

Create a solid contract

An ounce of prevention is always worth more than a pound of cure. You need to put preventative measures in place to protect you from nonpayment, the most crucial and basic of which is a solid contract.

Before signing a project contract with customers, meet with them to discuss everything that needs to be included. You need to put in clauses concerning how much and when you'll get paid. If appropriate, set up payment milestones such as the first payment is due when you finish placing a concrete slab or complete the foundation. Also, add some provisions that impose penalties for late payment and the right to suspend work until payment is received.

When setting the payment terms, consider the client risk. You don't want to enter into a contract with a client who doesn't have a stellar financial history. If it's a new client or the project is speculative, ask for a higher upfront payment. If it's a trusted repeat client, you have more room for flexibility.

There's no document that can guarantee you'll get paid. However, you can use the contract for leverage to demand payment or to sue clients for breach of contract if they refuse to pay.

Be flexible in your payment terms

As you specify the payment terms in your contract, you and your clients should agree on when invoices will be sent and payment methods your clients can use. Invoices can be sent via email, registered mail or private couriers. You may include a self-addressed envelope in your invoice and other necessary details to make payment more convenient for the client.

Consider automating the billing process. Some of the most common reasons for late payments are issues with the invoice itself. Automating the billing process saves you a lot of time and reduces inaccuracies in paperwork.

Send reminders about overdue accounts

When a client doesn't pay, it's vital to act fast. The longer an invoice is unpaid, the more difficult it is to pursue a client and exercise your payment rights. There are several state laws that impose a limit on how long you can wait after a construction project is complete before you can apply the legal remedies available to you. It's always important to send a past-due notice with a copy of the bill, the penalties and the contract itself via registered mail.

If clients still don't pay, drop by their office to ask why. As previously mentioned, they may withhold payment if they're not happy with the work you've done or they're having financial issues.

Depending on the situation, you must decide whether to take a hit and structure a lower payment deal or pursue legal action. If it's the latter, tell the client you intend to file a mechanic's lien. Some states require you to send preliminary notices before sending a mechanic's lien. This notice will let clients reconsider if they'd rather pay or be inconvenienced by a lawsuit.

Protect your payment rights

A mechanic's lien is a remedy that gives you legal claim on a property because of unpaid work you put into it. Lien laws vary across states so do your research to meet your area's requirements. Failure to comply can make your mechanic's lien invalid and unenforceable.

Send a preliminary notice of your intent to file a lien.

In general, the first step you must take is to send a preliminary notice of your intent to file a lien. It's good practice to send a preliminary notice to all your construction projects so you have the right to file a lien if necessary. Take note of the deadlines required by state laws to ensure you're covered.

Liens are generally successful when it comes to securing payment. The lien will create a public record of the property, preventing the property owner from selling or getting financing for the property before the lien is paid.

However, if the client still doesn't pay, it's time to take legal action to enforce the lien through foreclosure. Foreclosure forces the property to go on sale so that the lien can be satisfied by the proceeds of the sale.

Unfortunately, concrete contractors not getting paid on time is nothing new in the industry. But that doesn't mean you're powerless when it comes to collecting receivables. As long as you're proactive in setting contract terms and you know your payment rights, there are options you can use to get paid.

Patrick Hogan is the CEO of Handle, a company that builds software which helps contractors, subcontractors and material suppliers secure their lien rights and get paid faster by automating the collection process for unpaid invoices. He can be reached at info@handle.com or (800) 845-0625.

Photo courtesy of Concrete Camouflage

MANY *MOVING* PARTS

Plan ahead when acid staining during new construction

In new construction projects, most contractors prefer to stain floors when the actual building phase is almost complete. Staining sooner can lead to additional cleaning, touch-ups and/or repairs.

by Earl Choate

CONCRETE in new construction is like a blank canvas. Unblemished and uncracked, it's the ideal concrete to stain. Every stage — from cleaning to sealing — is important. However, there are many moving parts in new construction projects which can affect the concrete staining process. Timing is essential.

Concrete stain planning

Planning for an acid stain project is almost as important as the actual staining process itself. You'll need three to five days of minimal foot traffic in the work zone while the project is being completed. Scheduling in advance with the builder will save headaches and avoid cost overruns.

With the ideal temperature between 50 and 90 degrees F, try to do most of the work during the cooler part of the day. Staining and sealing should also be scheduled on days without rain or excess humidity.

Curing times may vary

Staining should take place after the concrete has been properly cured — usually about 28 days — but temperature and rain can affect that time. For example, if a concrete slab has been rained on significantly during the early part of the curing period, or with low temperatures, you'll need to wait longer to stain. Scenarios like these could increase the curing period to 30 to 45 days or more.

If concrete isn't properly cured, it can impact tensile strength, worsen efflorescence and alter the stain's color. Premature staining can damage the developing bonds of the cement, lime and minerals, affecting overall durability.

Concrete surfaces also retain moisture during the curing stage. Watered down by the excess moisture, the stain's ability to react will be hampered and the appearance will change as the concrete continues to cure. Moisture trapped in concrete is also one of the main causes of efflorescence — as it shuttles salts to the surface.

One indicator of cured concrete is color uniformity. If there are still patches of alternating gray and white, the curing period needs to be longer. Wait to begin staining until the concrete has cured to a uniform color.

Anything placed on the concrete prior to a full cure, including protective plastic sheets or blankets, can cause curing differentials. Also, many experts recommend not using products to speed up the curing process because they can affect the stain's quality by sealing up the concrete pores and preventing the stain from reacting properly. Curing agents also must be removed via sanding or stripping prior to staining.

Factor in protection timing

It's crucial to protect concrete before and after the staining process. Oil, grease, glue, paint and other contaminants can affect the stain's final appearance.

Activities such as HVAC and plumbing installation can create a huge, blotchy mess on concrete. Spray-on insulation is detrimental, as it must be removed with major sanding or deep grinding. It's best to cover concrete with heavy cardboard, wall sheathing or an industry-specific surface protector before other trades begin their work.

If anything should happen prior to staining that requires the concrete to undergo extreme cleaning, don't acid wash or etch the concrete. It's better to sand, use paint remover or green cleaner to remove the blemish. Acid etching or washing will adversely affect concrete's ability to retain the color of the stain.

When covering concrete, anything with print (i.e., lettering or logos) should face upward. Print designs can make a lasting imprint, or tattoo, on the concrete. Furthermore, don't attach tape directly to the concrete as it will leave glue residue.

If you're covering concrete before the sheetrock goes up, keep your protective layer

about ¾ inch away from the framed wall. If needed, you can tape this edge as sheetrock and baseboard will cover the strip. If covering after sheetrock has gone up, take the covering all the way to the wall.

Performing the staining

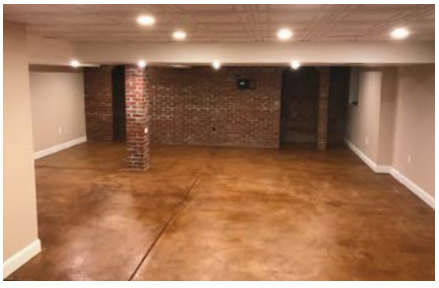
Acid stain can be left on concrete for up to 24 hours or more — depending on how dark a stain you want. Allowing the stain to sit overnight, or even longer, will achieve darker and richer colors. To achieve a lighter stain, three to four hours should do.

Stain dries much quicker in the heat, so during the summer applying stain is best completed in the morning when the temperature is lower. In winter, staining should be done in late morning to midday when the temperature is higher. Premature drying causes darkening and lines in overlapping sections of stain. Being able to connect "wet edges" of stain on the concrete prevents this from happening.

Interiors

There are typically two fields of thought on when to start the interior staining process.

The first is to wait until construction is almost complete, as "decor" is usually on the list of final touches. Staining sooner, even with covering and protecting the concrete, means possibly having to do additional cleaning, touch-ups and/or repairs once it's uncovered. If you do it last, then you only need to do it once.



The second thought is to do the staining after the walls have been framed and before the drywall is installed. This reduces the need to do extensive coverage on the walls to prevent splashes and drips from interfering with molding, drywall and other fixtures. Also, in case the protective covering fails, the staining process has created barriers of protection. Cleaning and repairing a properly sealed and stained floor are easier than having to clean raw concrete where contaminants have penetrated the surface pores.

Regardless of which path you choose, during construction make sure the framers don't brace the walls with nails into the concrete. Nails will damage the concrete when removed, leaving large divots. In addition, don't use markers or red chalk in the chalk lines. These can permanently stain the concrete. Blue chalk and pencils, by comparison, will wash right off.

Photos courtesy of Concrete Camouflage

Between 50 and 90 degrees F is the ideal temperature to acid stain or seal an exterior surface. Staining and sealing should be scheduled for days without rain or excess humidity.

Exteriors

Exterior staining should be done during a time without rain (or excess moisture) and a low chance of debris from construction. It should also be done before any serious landscaping is complete. Acid stain runoff, and residue from removing the stain, can temporarily damage nearby plants. Be cautious of sprinklers turning on during the process as well.

Other things to consider

When staining interior or smooth machine-trowel finished concrete, make sure the pores of the concrete are adequately opened in advance. Using a floor buffing machine with aggressive scrubbing pads and trisodium phosphate (TSP) or soap and water works well.

The pores in exterior broom-finished concrete are already open, but a light power washing is always a good idea. Oils like the ones used during HVAC installations can soak into the concrete without being seen. It's a good idea to use a good concrete degreaser prior to the final clean and rinse.

Sealing, especially for exteriors, should be completed in the cooler, earlier part of the day. It's also best to avoid sealing during days with rain or a humidity level above 65%. Too much heat can cause solvent-based sealers to "bubble." If the surrounding air is too hot, the sealer's base evaporates faster than the rest of the product, causing it to disrupt the surface as it dries. On the other hand, if the temperature is lower than 45 degrees F, it will take much longer for the sealer to dry.

Proper sealing requires about two hours to dry. An indication of a dry sealer is a clear appearance with a texture that's neither sticky nor soft. Water-based sealers need at least 12 to 24 hours of initial curing time. Solvent-based sealers need at least 72 to 84 hours. Full curing times range from five to 10 days.

Inadequate drying times between layers can lead to a cloudy appearance. Additional layers should be applied only when the sealer is completely clear and not sticky. Moisture trapped within, or penetrating the sealer before it's fully cured, can cause both a cloudy appearance and flaking. It's best to seal when there are two consecutive days of predicted low humidity.

Earl Choate is the CEO and founder of Concrete Camouflage, an e-commerce company based in Missouri that designs and markets its own proprietary concrete staining supplies. He can be reached at earl@concretecamouflage.com or (800) 650-1157.

Roosters Brewery

A floor reps can crow about

by Stacey Enesey Klemenc

THROUGH what Laticrete channel manager Jeff Bonkiewicz labels "connections," a diverse group of Spartacote resinous flooring and Laticrete salesmen, company representatives and contractors teamed up to install a 13,000-square-foot floor for a new craft beer facility in Ogden, Utah.

The project, led by Troy Wicks, Laticrete's national sales manager for resinous flooring, was an opportunity for newbies to the Spartacote resinous flooring team to learn about products the company sells by seeing, touching and feeling them in a real-life situation.

"One or our initiatives in team selling is for our people to be on the lookout for jobs involving products that they aren't necessarily responsible for selling," says

Photo courtesy of Laticrete

Project at a Glance:

Client: Roosters Brewing Co.

Installers: Spartacote resinous flooring team and associated Laticrete reps and contractors.

Project Scope: To install a urethane cement system on a 9,000-square-foot floor for Roosters B Street, a new craft beer facility in Ogden, Utah.

Challenge: Shot blasting the floor to achieve a CSP 4 in preparation of installing the urethane cement system.

Products and equipment used: Spartacote Urethane Cement, Spartacote Flex Pure Clinical Plus, Spartacote Grip traction additive, Spartacote Fast Fix, Wooster 18-inch roller sleeves, Collomix mixer, Midwest Rake gauge rakes, Laticrete branded 6-gallon buckets

Bonkiewicz. For instance, tile and stone reps making sales calls could encounter situations where resinous flooring or urethane cement products may be better suited for the job and could recommend what would best fit their customers' needs.

And what better way to learn about how these products work than some good old-fashioned hands-on training? That's where Roosters Brewery enters the picture.

Picking and prepping

Roosters Brewery — "the" place to go in Ogden, Utah — first opened in 1995, far ahead of the flock of craft beer manufacturers that have since settled throughout the United States. Over the ensuing decades, the brewhouse expanded with a second location in nearby Layton. Last fall, Roosters Brewing Co. decided to spread its wings a bit farther and feather its newest nest in a lifestyle-centered industrial park in Ogden's new "Trackline" development.

Called Roosters B Street, the new brewery occupies 13,000 square feet of production, dining and tap room space, with 9,000 square feet of that earmarked for the beer-making production area.

To meet the rigorous demands of beer making, the production area floor must withstand a wide temperature range and the associated thermal shock when water is released. The owners, Kym and Pete Buttschardt, were also looking for a flooring solution that was long lasting and had excellent chemical and stain resistance. They knew a normal epoxy coating wouldn't do the trick.

The solution the Buttschardts landed on was Spartacote Urethane Cement with Spartacote Flex Pure Clinical Plus with a traction additive for additional protection. Prepping the surface to install this resinous coating was probably the most challenging part of the job and one of the most important steps.

"Jobs like this for urethane cement require a CSP (Concrete Surface Profile) 4, which is achieved by shot blasting or a heavy grind," Bonkiewicz says. "Proper prepping is really the only way to ensure proper installation. Without it, the whole thing can go sideways."

After the existing concrete was prepped, the crew spent about two days fixing cracks and spalls with Spartacote Fast Fix, a two-part, hybrid-urethane crack repair product. Once the repairs were done, they vacuumed and swept the floor in preparation for the urethane cement.

A day of hard labor

The four-part coating consisted of resin, a hardener, aggregate and red pigment, the latter to align with the brewery's branding and logo, Bonkiewicz says. First, the crew mixed the resin and hardener together in 6-gallon pails before adding in the aggregate and then pigment pack. Each hefty batch weighed about 70 pounds and subsequently was wheeled from one end of the building to the other for the application process.

"Mixing urethane cement is no easy task," Bonkiewicz says. And installing it requires some heavy physical labor, too, the installers soon discovered. It took them a good six hours to mix and place the urethane cement at 3/16 inch. "We had two guys mixing, one guy pouring and two guys gauge raking," he says, with another back rolling.

"I think we had seven guys total

(working) on the project," Bonkiewicz says, as some of the 15 attendees were just there to watch.

The work was a continuous six hours as a wet edge needs to be maintained when placing the urethane to prevent a flooring failure. Stopping for a break isn't an option.

After the floor was 100% covered, "We were done for the day," he says. "That was a big day."

Positive outcome

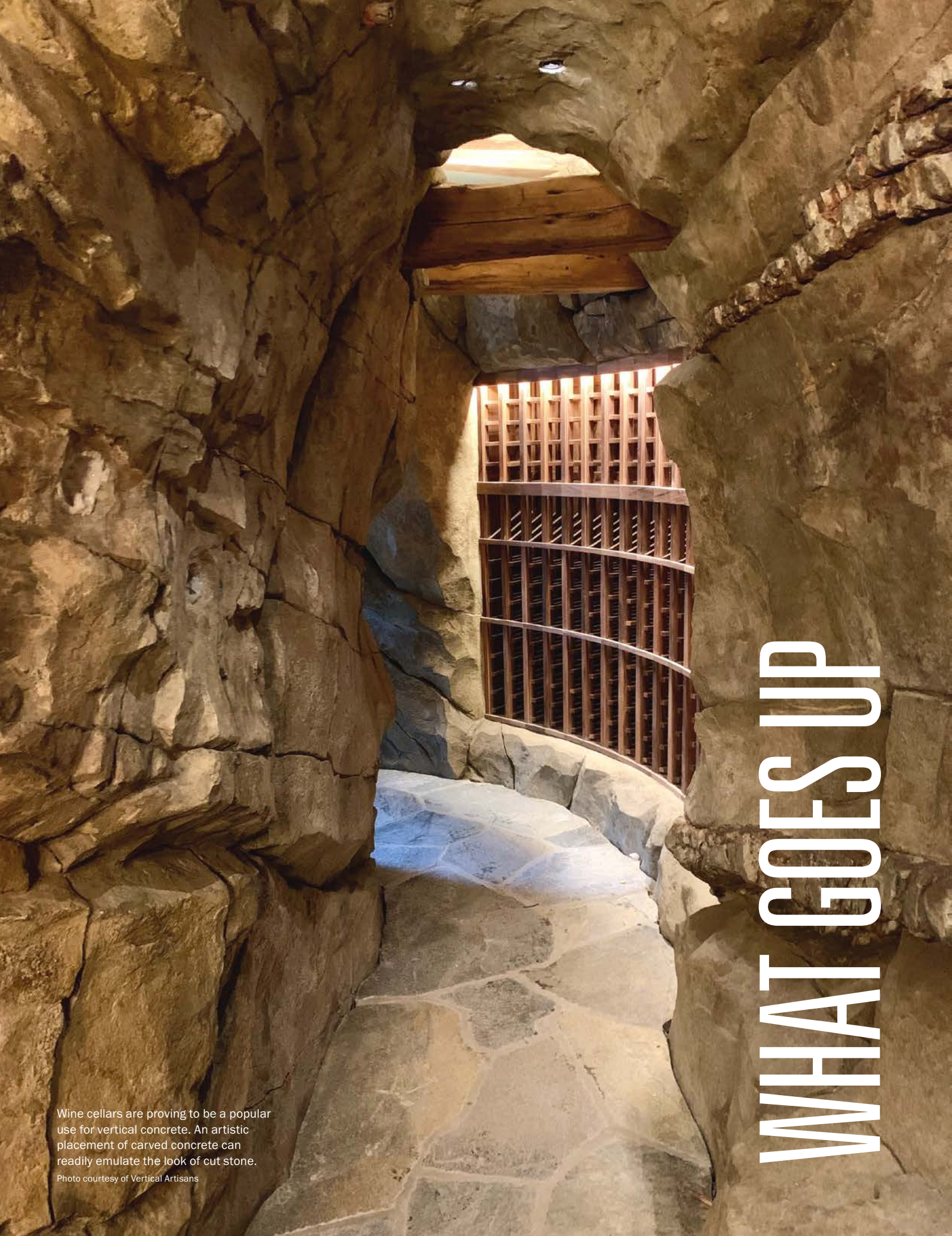
After allowing the coating to cure for eight hours, the crew came back the next day to apply the pigmented polyaspartic topcoat. Spartacote Flex Pure Clinical Plus was pigmented bright red with Spartacote Grip traction additive.

"The topcoat goes down really fast," Bonkiewicz says about the two-part finish. A ribbon of the mixture was poured onto the floor and immediately squeegeed onto the surface. Crew members wearing spikes then rolled out the material perpendicularly, followed by another member back rolling perpendicular to those already placed. It took roughly an hour to coat the entire 9,000 square feet.

This finish arms the floor with antimicrobial protection and makes it resistant to abrasion, stains and chemical intrusion. It only takes two hours to cure, allowing for fast return to service. Combined with the urethane cement coating, the Spartacote system also protects against heavy-duty impact.

The Rooster Brewery project was a win-win for everyone involved, Bonkiewicz says. "We got to train internal guys, as well as some of our contractors new to our urethane cement. And the folks that own the brewery are thrilled with their floor for the new brewing area. It's going to be a great floor for many years to come."

WHAT GOES UP



Wine cellars are proving to be a popular use for vertical concrete. An artistic placement of carved concrete can readily emulate the look of cut stone.

Photo courtesy of Vertical Artisans

Photo courtesy of Gera Concrete

With the economy better than it was a few years ago, more and more people are putting money into upgraded amenities for their homes. A big slice of the market for vertical concrete is residential backyards.

Use of vertical concrete on the rise

by K. Schipper

LOOKING for a way to expand your business' offerings or add a little more creativity to your life? Either way, the vertical surfaces market may be for you.

While the idea of hand-carving and coloring concrete on vertical surfaces has been around for at least two decades, its popularity is on the rise, both with homeowners looking for something unique for a fireplace or outdoor kitchen, and for special applications.

As with other creative endeavors, there's no one formula for getting it up and getting the color and appearance just right. Different methods and products have their own positives and negatives, but those who make a living with vertical concrete suggest it's an area where classes and a willingness to experiment can pay off both in cash and satisfaction.

Photo courtesy of Graco

While hand-mudding vertical concrete projects is the preferred method for getting a working surface ready to be shaped and carved, for bigger jobs it's not necessarily efficient.

Enter a spray system — often known as shotcrete — which has been around for more than 100 years. The idea is that with the right mud mix and the right pump it's possible to cover larger work areas quickly and evenly.

Emil Gera of Gera Concrete in Weatherly, Pennsylvania, says for the right job, say a 40-by-10-foot wall, he certainly considers shotcrete to get the best coverage.

"If we're going to be doing a really large project," he says, "I'll order a blend from the local concrete company and spray it." Hand-mixing for that amount of coverage would be overly time consuming.

Danny Carrillo, development manager for Minneapolis-based Graco's ToughTek line of pumps, says if it's something a concrete contractor needs, ToughTek will shoot mortar onto floors, walls or ceilings, regardless of the underlying substrate.

"Depending on the material, the application can go anywhere from a half-inch to two inches in thickness," he says.

And, while Carrillo says he won't recommend a particular product, at one time or another the company has probably experimented with it — including most of the admix concrete-carving products.

The only difference: many require either a lime or clay product to aid in pumpability.

"We know the proper mixes for the materials that will pump under any circumstance," he says. "They can adjust from there."

However, he notes that anything with an aggregate size greater than a quarter-inch probably won't work. Clean sand is a must, as well.

Still ToughTek operators regularly use pumps to apply anything from stucco and fireproofing products to self-leveling flooring. Normal capacity is one-to-three pallets per hour.

Carrillo says the other advantage to ToughTek pumps is that they're available in different sizes — but none is too large not to fit in the back of a small pickup or through a standard door. Both 110-volt and 220-volt three-phase models are available.

— K. Schipper

Photos courtesy of Gera Concrete

Vertical concrete in the backyard is gaining ground in residential areas across the country and proving to be a popular treatment for outdoor kitchens and fireplaces.

At home ... everywhere

For a technique that was foreign to many people in the concrete industry until recent years, vertical wall carving is on a roll.

"It's definitely gaining traction in the market," says Jeremy Wilkerson, owner of distribution company DreamKrete in Midlothian, Virginia. "Vertical is one of those really unique types of finishes in decorative concrete that a lot of people are interested in."

And, for such a custom product, it may come as a surprise that the biggest market for carved vertical concrete involves backyards of homes large and small.

"Outdoor is a huge area for growth," says Nathan Giffin, owner of Vertical Artisans in Hickory Hills, Illinois. "The vertical area has expanded largely into outdoor spaces that would be a natural fit, such as artificial rocks for waterfalls and things of that nature (like) outcroppings, hardscapes. But we've also branched into seat walls, planters, outdoor fireplaces and outdoor kitchens."

Emil Gera of Gera Concrete in Weatherly, Pennsylvania, agrees that currently he has a lot of residential customers who want exterior amenities like fire pits and seat walls in their backyards. But, he points out, today's vertical carving projects don't have to be outdoors or simulate rock.

Vertical concrete isn't just being used to replicate a wide variety of stone. This handsome entertainment center may look like reclaimed barn wood, but it's carved concrete. The unit's operable doors are designed to slide back and forth.

One of his jobs this past winter involved building a fireplace/entertainment center in a living room. The massive unit equipped with a large TV looks like it was made from large timbers, with sliding barn doors on the front and a fireplace beneath the TV. "The barn doors open and close and give (the owners) extra storage," Gera says.

Warren Ness, who offers both vertical concrete services and training through his Spokane, Washington-based business Rock Sculptor, says for him business is evenly divided between residential and commercial clients — and surprisingly they're often looking for the same things, like pools and water features.

"Beyond that, you have fireplaces, facades and covering up unsightly foundations," Ness says. And, while the rock finish is the most popular, simulated wood is gaining ground.

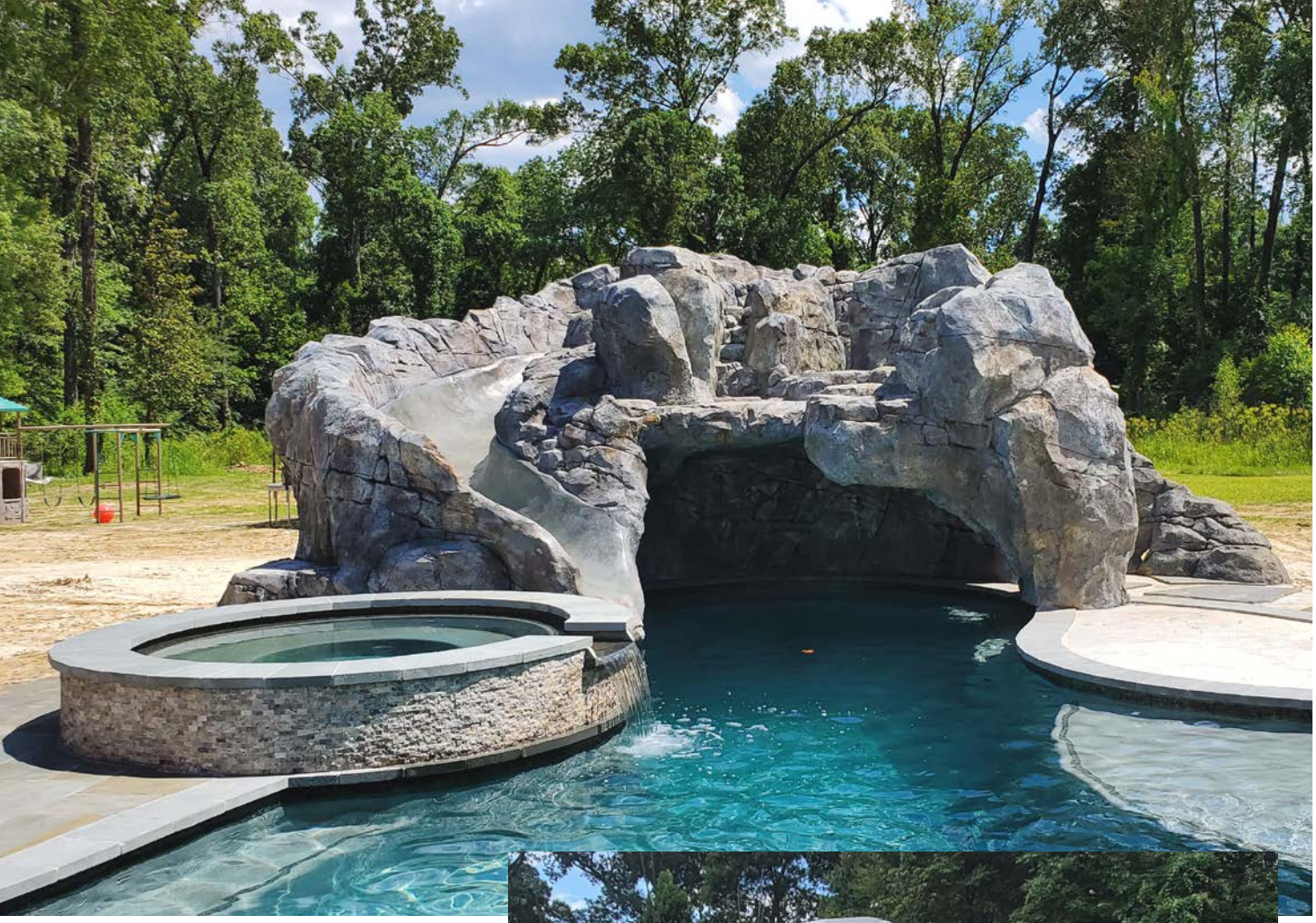
Joshua Russell is something of an outlier in this group of artists. The owner of Beyond Vertical Concrete in Byron, Michigan, says his split is probably 80% commercial and 20% residential, which is right in line with his business plan. Whereas he continues to work with families with lower budgets, he concentrates on larger projects. Recent projects have included exhibit spaces for zoos in Detroit, Toronto and Alabama, as well as water features for a new resort in Ludington, Michigan.

His work at the resort includes a carved feature that's based on a boat theme, Russell says, after he convinced the owner to let him carve replicas of the famous ships that have sunk in lakes Michigan, Heron and Superior.

A tale of two foundations

Possibly fueling the rise of carved vertical concrete is a newer method for providing the foundations of these jobs: foam core construction.

Vertical Artisans' Giffin, for one, attributes much of the current market's



There's plenty of discussion these days over the merits of using lath and rebar construction versus foam core. Some contractors take a mix-and-match approach, using rebar for areas that need structural support and using the much lighter foam core for areas that don't.

Photos courtesy of Beyond Vertical Concrete

diversity to foam core construction — particularly the speed at which it allows projects to be built and the lighter weight of the end product.

"We don't see the same types of problems with foam core construction that we do with lath and mesh," he says. "The lath is a galvanized product, but we still see cracking. There's rusting of the metal. There's exposure."

Rock Sculptor's Ness agrees that the pitfalls of rebar or lath construction are well-known. However, he says it's also a time-tested method that has the advantage of providing structural integrity when needed.

"I look at foam as nothing more than a placeholder," Ness says. "There are certain guidelines to follow when using foam, and one of them is to go extra thick with a specialized, fortified, fiber-rich mortar because then you aren't relying on the foam. The shell of the mortar is providing the structural integrity."

Beyond Vertical Concrete's Russell admits foam core construction can be a touchy subject. For one thing, there's not a lot of data on it and what information is available has mostly come from Europe. He says some people he was working with couldn't get a building permit for a job in Florida involving foam core construction because of concerns about liability and insurance.

Currently, however, in Baton Rouge, Louisiana, he's working on a water project where the grotto and the slide are rebar-engineered, and the mass of the fountain is foam. For the parts of the structure that need to structurally sound, he's including rebar reinforcement.

Russell's not the only one who's doing a mix of both methods. DreamKrete's Wilkerson estimates

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Photo courtesy of Beyond Vertical Concrete

This foam-core construction staircase and fire bowl was built as part of a residential backyard project in Lafayette, Louisiana, done by Bask Pools and Beyond Vertical Concrete. It features 24 hand-carved steps leading to a 39-foot waterslide.

about 85% of the residential projects he supplies are done with foam, as well as some of the small commercial projects.

Gera estimates his split at 75%-25%, although he says part of the problem with foam is its availability.

"We're doing mostly foam because it fits better for the fireplaces and seat walls," he says. "I see rebar and steel more geared toward water features and things like that."

The substrate the artisans put their work on isn't always the same, but there's a great deal of agreement that using premixed products is better than creating from scratch — although there's a certain amount of tinkering with the products anyway.

Rock Sculptor's Ness, for instance, uses a vertical carving admix called Car-VZ, which he co-developed with Trinic LLC, that's aimed at solving common problems that plague vertical carved concrete. It's one of several such admixes on the market.

"You source your portland cement and your sand," he says. "Car-VZ takes the sand and cement and transforms it into a mortar that can be sculpted and has water-repelling properties, as well as anti-shrinking agents. One of the nice things about this admix is being able to adjust the sand quantity and type."

Ness adds that it's not a one-size-fits-all when it comes to mixes, and that textural finishes from sandstone to decayed wood require slightly different

formulations that greatly impact the final look.

Beyond Vertical Concrete's Russell agrees there are several good mixes developed for the vertical market, often with good, long setting times that carve well, although some work better for certain applications than others. "They all have their place in the market," he says.

Color conundrum

When it comes to coloring — and sealing — their projects, these vertical concrete artists take a variety of approaches, often based on years of experience.

Vertical Artisans' Giffin, for instances, says he's going back to his concrete roots when working with color hardeners and color releases to create color outdoors.

"The industry at-large seems to be dealing with fading issues, leeching issues and a general weakening of color with time," he says. "The first rock I ever did sits in my front yard. I did it with color hardeners more than 20 years ago, and it still has its colors."

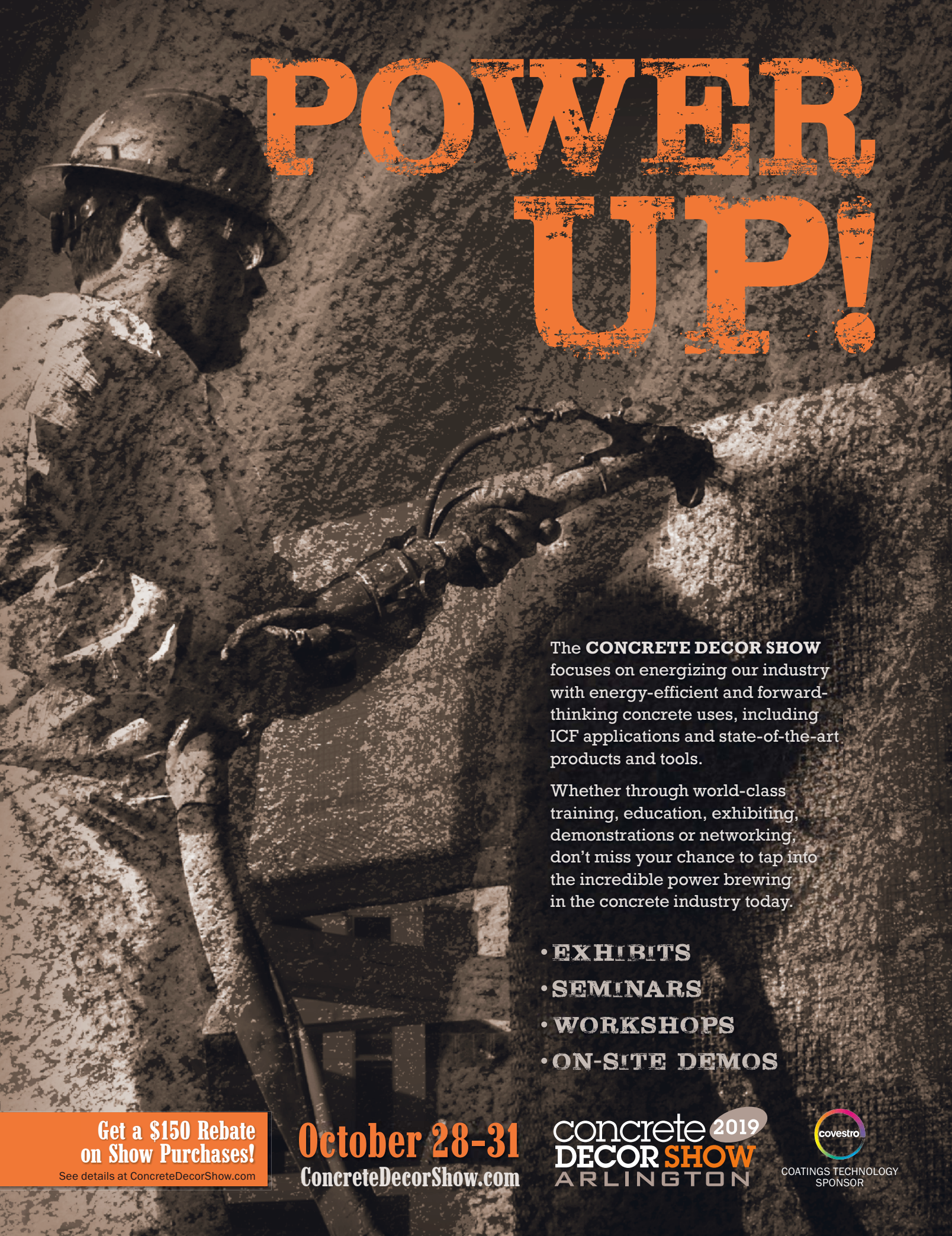
Photo courtesy of Beyond Vertical Concrete

For this project, Beyond Vertical Concrete teamed up with Michigan Shotcrete Construction to refurbish the red panda exhibit for the Detroit Zoo. The rock formation with its aesthetic shotcrete veneer and faux bois accents houses a pump house. The exhibit opened in late 2018.

The only other option he sees for long-term color durability is acid stains. However, that isn't everyone's goal or preference.

Gera Concrete's Gera says he prefers water-based stains, which he applies with spray bottles, an airbrush or a high-volume, low-pressure spray gun. The reason: "It's very easy for me to achieve realistic-looking colors with them, and they're transparent."

Rock Sculptor's Ness prefers using integral color on anything that will be submerged in water, and a mix of acrylic colorant, glazes and transparent



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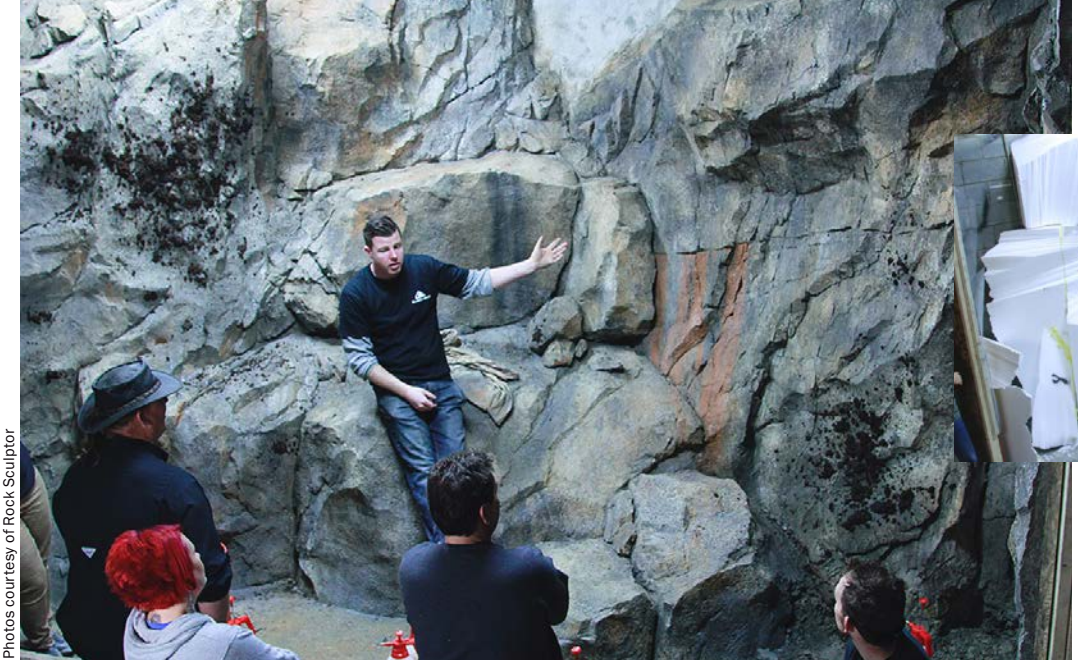
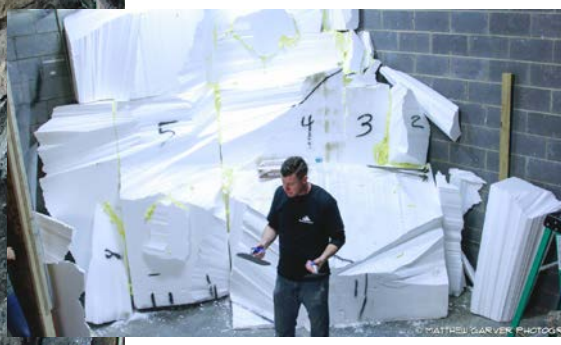


Photos courtesy of Rock Sculptor



Warren Ness leads a class in concrete carving. While it's possible to teach yourself the nuances of vertical concrete, a class or two with an experienced instructor can make a big difference in keeping clients happy and showing a profit.

washes if it's not.

"Each one is site-specific," Ness says.

Whatever system is used — anything from exterior latex paints to water-based stains — the real secret to success is being patient, says Russell of Beyond Vertical Concrete.

"It's the end of the job and people want to rush through it and get paid, but you have to let each paint layer dry completely before you glaze and overlay," he says. "It may look good when it's first applied, but the next day it's mottled into a monotone color without highlights."

Russell further advises keeping the color palette simple. And, while he seals anything near water, he says he leaves much of his work unsealed.

"Typically, the pigment saturates so deep into the concrete that mechanical bonding has never been an issue," he says. "I've been back to visit a few jobs after six or seven years, and I think they look better than the day I left because of nature putting down its patina."

Regardless of the job, Rock Sculptor's Ness says the best advice he can offer is to plan.

"Have the sequence of events mapped out in your brain before the mud goes up," he says. "And, to make it as realistic looking as possible, do little sketch studies." These can just be crude outlines that show the elements of form, color and texture to help achieve the hyper-realistic look people are seeking. Ness feels so strongly about this that he's revising his approach in his training classes to stress planning.

DreamKrete's Wilkerson, who used to work as a contractor before becoming a distributor, says the bottom line is people need to work with the mud and let their imaginations flow.

"Spend money on quality training courses," he urges. "There are a lot of good trainers out there, and if you pick up one thing they do differently from the next guy, it can take your business to the next level."

www.dreamkrete.com
www.geraconcrete.com
www.rocksculptor.com
www.verticalartisans.com

Warm Weather Practices

Don't let placing decorative concrete become a hot mess

by Chris Sullivan

SUMMER has been slow to arrive this year. Most of the country is still shaking off the effects of a long cold winter followed by a wet spring. Eventually the temperature will rise, and the long hot days of summer will be upon us. With that in mind now would be a good time to review warm weather practices.

According to ACI 305R-10 Guide to Hot Weather Concreting, "Environmental factors, such as high ambient temperature, low humidity, high wind, or both low humidity and high wind, affect concrete properties and the construction operations of mixing, transporting and placing of the concrete materials."

Anyone placing decorative concrete should be aware and comfortable with these practices. In addition to the ACI guidelines, here are some other considerations when placing decorative concrete or working with decorative concrete products in hot weather.

Photo by Chris Sullivan

Applying a sealer that's high in acetone to a dark driveway in hot conditions may lead to rapid drying and blistering, and result in a blotchy and inconsistent finish.

Color – Dark colors absorb heat; light colors reflect heat. Working on a dark surface or with dark colors in hot conditions can change how material flows or how fast materials dry. This is especially true when sealing or staining dark surfaces in direct sunlight.

In direct summer sun a dark colored concrete surface can reach in excess of 130-140 degrees F while the air temperature is in the 90s. Aside from application, consider the long-term implications and overall comfort for future use when considering color in hot climates.

Surface Evaporative Control – This is a method of spray-applying a water-based liquid chemical to the surface of plastic concrete to slow hydration from sun and wind. It's important to note that some of these products can be used as a finishing aid when floating or troweling concrete in warm weather conditions. Before using any surface evaporative control agent as a finishing aid, always check the application guidelines.

Shadow Management – This is a term I heard on a golf course many years ago in regard to controlling where your shadow falls when standing on the green. The same applies when installing heat-sensitive products in warm weather. If half the project is in full sun and the other half is in shade from a tree or building, this will dramatically impact surface temperature and dry times.

As an installer, work with the environment, not against it. Start work when shadows are at a minimum. Break the job up into sections or use admixtures to slow the set based on where in the project the material is being placed. There are companies that offer small admixture add-packs for use on-site and for small loads. Small jobs can sometimes be tarped to provide full shade.

Dry times – When using stains, tints or sealers, understanding the product composition can make life easier. Heat is the universal catalyst. As temperature increases, so does the rate of reaction. In the decorative concrete world this equates to an increase in evaporation rate and a decrease in pot life, open time, dry time and set time.

In moderate weather conditions both water- and solvent-based sealers can be used without issue. As the temperature increases solvent-based sealers become more difficult to work with because solvents rapidly evaporate. Common issues resulting in warm weather application of solvent-based sealers include blisters or bubbles, inconsistent or blotchy coverage, and reduced coverage rates.

When working with stains and dyes in warm conditions, evaporation rate can impact the final color. I've seen many stain projects where the color was weak or nonexistent because the liquid carrier evaporated before carrying the color into the concrete surface.

An easy fix for most of those applications involves pre-wetting the surface prior to application. Not only does this reduce the temperature but it can help draw the stain or dye down into the concrete faster. Always make sure the color product you're using is compatible with water before attempting this technique.

Storage – Where and how products are stored is often overlooked. Consider that for many reactions that take place at room temperature, the rate of reaction roughly doubles for every 18 degrees F the temperature rises.

Now consider how that affects sealer sitting in the back of a truck all day in the summer sun. Heat can also impact the performance of certain polymers and resins over time.

A few years back, I was very frustrated during a product training session in the Caribbean. An overlay product I'd used hundreds of times prior was sticky and hard to work with. I was at a loss as to why until I realized the material had been stored outside for days, in tropical heat, prior to my arrival.

The product temperature was in the 90-degree range, which basically made it unusable. Storing the powder in a temperature-controlled warehouse and soaking the liquids in drums of ice water solved that problem. It's also important to note that storing flammable solvent-based materials in hot conditions can lead to pails rupturing and possibly exploding.

Application – Be prepared to adjust how you apply products depending on the temperature. An efficient method for applying stains and sealers is with an airless or HVLP sprayer. These sprayers atomize the product resulting in a consistent and uniform application rate.

Raise the temperature and throw in a stiff breeze and that fine mist will blow away in the wind. It's common practice to increase the application rate and tip opening as the temperature rises. In some cases installers will move to low-volume pump-up sprayers of rolling sealers in warm weather. Of course you want to avoid the heat of the day, but that's not always possible.

Product Mix – Not all products are designed for use in all environments. Acetone is a moisture scavenger, which means it grabs water and holds onto it. Using a high acetone-content sealer in high humidity environments (summertime in most of the country and coastal areas all the time) can lead to blushing and haze.

For those who see an increase in blushing and haze in the summer, this may be the cause. Becoming comfortable with multiple products and having warm weather options are never bad ideas.

Photo by Ross Urshan

Shadows can dramatically impact surface temperature and dry times if parts of a project are in full sun while others are in shade. Small jobs can sometimes be tarped to provide full shade.

So where do you find out information about the products you use and what they are made of? Start with the technical data sheets and safety data sheets. As a side note, by law you must provide your employees access to these documents and be able to produce them to anyone who asks on a job site. Digital versions online do qualify. These documents address best use for the product, limitations, proper handling and storage, and many times temperature range for use.

I've noted a few key areas where warm weather impacts decorative concrete applications. There are others, so I encourage everyone to do their research and use the wealth of information available. Noteworthy sources include the American Concrete Institute, American Society of Concrete Contractors, National Ready Mix Concrete Association, *Concrete Decor* magazine and www.concretedecor.net, to name just a few.

Chris Sullivan is vice president of sales and marketing with ChemSystems Inc. and a member of the Decorative Concrete Hall of Fame. He has led seminars and product demonstrations throughout North America. Reach him at questions@concretedecor.net.

Pulling Back the Shroud

Explore the many uses of polyurea for polishing projects

As polished concrete has increased in popularity, polyurea is being used for everything from filling pinhole voids created by air to filling large spalls up to 3 inches in diameter. Photos courtesy of David Stephenson

by David Stephenson

AS polished concrete has increased in popularity, there has been a tremendous number of innovative products brought to the market to help meet customer expectations. One very important product is polyurea. It's a two-part liquid-applied product that sets up quickly, gets hard enough to polish, and comes in a wide variety of colors and viscosity levels.

Pretty much every polished concrete project uses polyurea for joint fill because traditional epoxy joint fillers never get hard enough to polish. Since over half of the polished concrete projects are installed as remodels, there is a wide variety of issues that need repairing. Everything from large spalls up to 3 inches in diameter down to pinhole voids created by air or sand rollout are repaired with specialized polyurea repair products.

This article will help demystify polyurea and review best practices, as well as cover some potential issues that can arise during installations.

Joint fill uses

Polyurea is largely used to fill joints. On every joint fill product, you see numbers. These numbers are typically 80s or 60s. It's important to understand these numbers and what bearing they have on your product selection.

The numbers represent a measurement called "shore hardness," which is a fancy name to measure how easily a material indents or depresses. The higher the number, the harder the material. The flip side, though, is that the higher the number, the less it's able to stretch. Hardness is important because of how it affects a project and meets customer expectations.

Control joints are placed in concrete slabs to provide intentional weak spots for the concrete to crack as it shrinks. These joints are typically spaced between 10 and 20 feet apart. Most slabs placed in the last 50 years have control joints cut into them. These joints are typically filled on exposed floors.

Control joints are placed in concrete slabs to provide intentional weak spots for the concrete to crack as it shrinks. These joints are typically filled on exposed floors.

Since concrete absorbs and releases moisture from any available source (including the air) it's always swelling and shrinking throughout the year. In projects like distribution centers

or manufacturing plants, the joint fill needs to be rigid to prevent forklifts from constantly breaking the edges of the joints as they go over them hundreds of times a day. In this environment, you'd want a high shore hardness joint fill. It's less important that the joints be completely closed than it is to have a rigid and flat surface based on the traffic.

On the other end of the spectrum, you have restaurants, schools and grocery stores. In these environments, there's not typically a tremendous amount of heavy vehicular traffic constantly going over the joints. Before you say, "Wait a minute. You haven't seen my grocery cart every Sunday afternoon!" please consider that an extremely full cart weighs about 200 pounds where an average forklift weighs between 7,000 and 8,000 pounds.

In these environments, it's much more important to have a joint that remains closed than it is to have one that remains flush with the surface. The softer joint fill, with the lower shore hardness, can stretch more which will keep the joints closed as the concrete shrinks. The softer material, once it's stretched out, will have a slight depression in the joint.

All major joint fill manufacturers make dozens of color packs for their products. This is an extremely important characteristic. Most customers want their joints to blend with the surrounding concrete floor. Rarely do you get a project where the joint colors are intended to be different as a design characteristic.

No matter the color, there is a polyurea to match the customers' desires. Typically, when a project is started, the first thing completed is a sample. This allows customers to see a good representation of what the floor will look like when completed, as well as allow the contractor to determine the best process to complete the floor to the customers' satisfaction.

I carry a joint sample kit with me. I take out multiple chips and place them on the floor. I then remove the samples until I get to a color that the customer is happy with. Typically, the base material is already on-site and the color packs for the control joints are all that needs to be shipped to the job site.

No matter the color, there's a polyurea filler that will match the floor. Most customers want the joints to blend in with the surrounding concrete floor.

Grout installs

Polyurea can also be used as a grout fill. This material is distributed as a liquid, but it takes a lot longer to set up and get hard. This allows the material to be placed over a larger area with a trowel or a squeegee. It can be used to fill in small holes caused by air, rock or sand rollout or damaged areas on the surface.

Polyurea can be used as grout to fill small holes and pits, as seen in the lit area. The grout is a good match to the color of the concrete, so it blends well.

As this material is also colored, the same color selected for the joint fill can be ordered for the grout material. When grout is properly applied and polished, the color is a great match to the concrete and is very difficult to see where grout has been installed.

Typically, grout should cure for six to eight hours before grinding the surface. This allows it to fully harden down in the small holes. If the material is ground before it's fully cured, it can pull out of the holes which obviously defeats the entire purpose.

Grout materials and the labor for installation are a bit expensive so most customers don't opt to do the entire floor. The only exception is when large aggregate is exposed by the grinding process. The small air voids trapped by the aggregate when the concrete is placed that get exposed with the deeper grinding need to be filled.

Grout is the only way to consistently fill these voids. If they aren't filled, they catch dirt and grease, and with regular traffic the holes act like potholes on a road. The edges break over time and the holes get larger. Using grout to fill these voids is easy and virtually undetectable when complete.

Spall repairs

On every remodel project you'll find spalls. Spalls resemble miniature ponds. They are holes with sloping edges typically shallower at the perimeter and deeper in the middle. They're common when walls or other fixtures that were anchored into the concrete are removed. They are also commonly caused by dropped tools or even screws imbedded in the tires of lifts.

Because of the small size and shallow edges, these types of repairs aren't ideal for overlay or cementitious repair materials. Applying a liquid material like polyurea to the hole is the perfect solution. The material used for this type of repair typically sets up in 10 to 20 minutes, allowing the surface to be shaved and the polishing process to continue over the top of the repair.

However, these materials have a size limitation. Anything larger than 3 inches tends to curl up at the edges which allows the repair to come out entirely with traffic and cleaning. Spall repair products are easy to install, and by matching the surrounding concrete they are harder to spot when looking over a floor.

There's a limit on how big a repair you can make with polyurea. Anything larger than 3 inches tends to curl up at the edges. This repair can come out entirely with traffic and cleaning.

Potential joint fill issues

Now that we've reviewed valuable uses for polyurea products, let's investigate when you need to be careful.

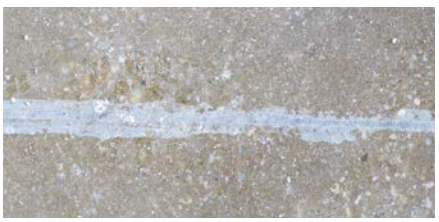
With joint fill, there are three major issues that regularly occur.

The first is joints that fail because the contractor didn't thoroughly clean them prior to installation. Some contractors use a saw with a vacuum attachment and run it down into the joints prior to filling them. Others use a wire brush on an angle grinder. Still others wield knives or five-way tools with shop vacuums.

No matter the method, you must get all the dirt out and everything off the joints' sidewalls. If the sidewalls are still dirty when you install your joint material, the joints will separate cleanly from one side as soon as the concrete starts to shrink. These joints are easy to remove and often come out completely when the floor is cleaned. Obviously, an open joint is both a safety and maintenance issue.

Underfilling a crack creates a maintenance and safety issue.

The second issue involves residue along both sides of the joint. This occurs when contractors wait until later in the polishing process to install their joint fill.



If floors aren't properly cleaned before they're repaired, the residue left behind will soak into pores and leave a pattern that remains even after the floor has been shaved.

When installing joint fill, the only way to guarantee that the joint is completely filled to the top is to slightly overfill the joint to ensure there's enough material in all areas. The overflow will sit on both sides of the joint. When the joint is shaved, a residue layer is left behind at the surface in the pores of the concrete. A grinder will easily take off the excess during the polishing process.

The only way to guarantee that a joint is completely filled is to slightly overfill it. When it's shaved, some residue will be left behind which a grinder will easily take off during the polishing process.

If you must fill joints later in the process, find a stain-preventing film (some manufacturers offer this) or use inexpensive Ivory bar soap (without dye in the soap) to create a soap barrier down both sides of the joint. If bar soap is used to create a film along both sides of the joint, this prevents the residue from getting into the concrete. With either process, the residue is kept out of the pores and the film layer is removed when the floor is cleaned with an auto scrubber without leaving a trace of the residue or the film protectant.

The third and final common joint fill issue is shaving joints too soon or shaving joints that are wider than the manufacturer's tolerances. This leaves chatter marks and odd scrapes along the joint. These easily stain and the look is usually unacceptable to most customers.

Shaving joints too soon or shaving joints that are wider than the manufacturer's tolerances will leave chatter marks and odd scrapes along the joint that easily stain.

Grout and spall concerns

There are two issues with grout installations. The first is when contractors attempt to install the grout without cleaning the floor or attempting to install grout without waiting until the pits and pores are completely dry. The second issue occurs when a contractor tries to polish the area before the grout has completely cured in the holes.

If a joint hasn't had enough time to dry before it's filled, the polyurea will bubble and fizz and never harden properly.

Both issues result in the grout pulling out of the holes you're trying to repair. This is a major issue because the customer doesn't want to pay for grouting a large square footage of the floor if the holes are still visible. This is an uphill battle that contractors never win.

It's important to set your customers' expectations here as there's no way to fill 100% of all the issues. Typically, grout materials will fill between 80% and 90% of the issues in a floor. Setting this expectation verbally early, in writing and with a sample will eliminate a lot of headaches after the install and ensure you're able to get paid for this costly repair process.

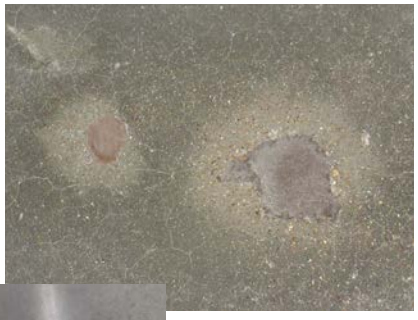
There are also three common issues with spall repairs. One is when the contractor tries to install the repair product without first cleaning the damaged area. If the hole is dirty or filled with grinding dust, the repair will come out as soon as the floor is ground or cleaned. Contractors usually use a wire brush attachment on a drill and a shop vac to first clean the spalls.

The second issue regularly seen is underfilling the repair. When the repair isn't filled correctly, it can't be ground smooth. This causes the repair to stand out on the floor.

When a repair is underfilled, it can't be ground smooth and will stand out on the floor.

The final issue happens when the contractor doesn't do the repairs early in the grinding process. Instead, he waits until the project is nearly wrapped up to install spall repairs.

Spall repairs should be installed before the last metal or transition tooling cut so that the surface is flush with the surrounding floor and the repair is polished like the rest of the floor. Don't grind and polish the spall with a hand grinder late in the process because it causes an unusual circular "halo" polish pattern around the repair.



Don't use a hand grinder late in the process to repair a spall or you'll get an unusual circular "halo" polish pattern around it. Halos stand out more on colored floors than on gray.

Understanding polyurea and its potential uses should help you do a better job for your customers. When customers are happy, they'll specify polished concrete more and the whole industry will continue to grow.

David Stephenson, based in Dallas, Texas, is president of Retail Polishing Management, a large national flooring installer. Prior to his position with RPM, he helped as a consultant with retail polishing programs and troubleshooting concrete issues for companies around the globe. Throughout his career, David has owned contracting companies that installed floors as well as manufacturing companies that made products that changed the industry. He can be reached at david@the-rpm-group.com.

MARKETPLACE

Sit Awhile and Enjoy the View

by Stacey Enesey Klemenc

"THREE Concrete Sculptures," recently on exhibit in Kayne Griffin Corcoran gallery's courtyard in Los Angeles, marked fabricator Rob Lan's maiden voyage into decorative concrete.

"I usually use composites, epoxy, fiberglass, polyester or weird deadly chemicals" to sculpt, says the sole proprietor of Rob Lan Fabrication in Los Angeles. But New York-based artist Sarah Crowner hired him to mold and cast the art pieces and she specified concrete for this fabrication. Consequently, Lan learned as he went.

His background is with special effects makeup, he says, which mainly involves plaster and various gypsum products. "I falsely assumed concrete (behaved) similar to gypsum, so I had to give myself a crash course on how to form concrete."

Lan turned to YouTube videos and Buddy Rhodes' website for advice and read anything he could get his hands on. The two disciplines, gypsum and concrete, cross over so it's not like he went into the job "super cold," he says. And thankfully the Buddy Rhodes product he turned to was "idiot-proof," which he says made his role all the easier.

The hardest part of the fabrication was getting used to the ratio of liquid to solid. "I was surprised at how little liquid we used," he says, adding that 10% of the total water used was pigment.

The mix he landed on was a blend of Buddy Rhodes admix, portland cement, sand, alkali-resistant (AR) glass fibers, acryl, water and Mixol pigments, the latter of which he purchased from JoAnne Setear with New York-based Sepp Leaf Products Inc. "JoAnne was a huge help with the Mixol colors," he says.

Mixol, which he had used before with gypsum and gotten good results, are "intensely saturated pigments," Lan continues. He tested powdered pigments for this job but the colors weren't vivid enough. Mixol, which he describes as a "viscous liquid," delivered the colors the artist envisioned.

Crowner, whose works feature geometric compositions and solid fields of color, often invites viewers to step inside the work or the world around it. For this series she created three-dimensional sculptures that viewers could sit on while spending time within the presented landscape.

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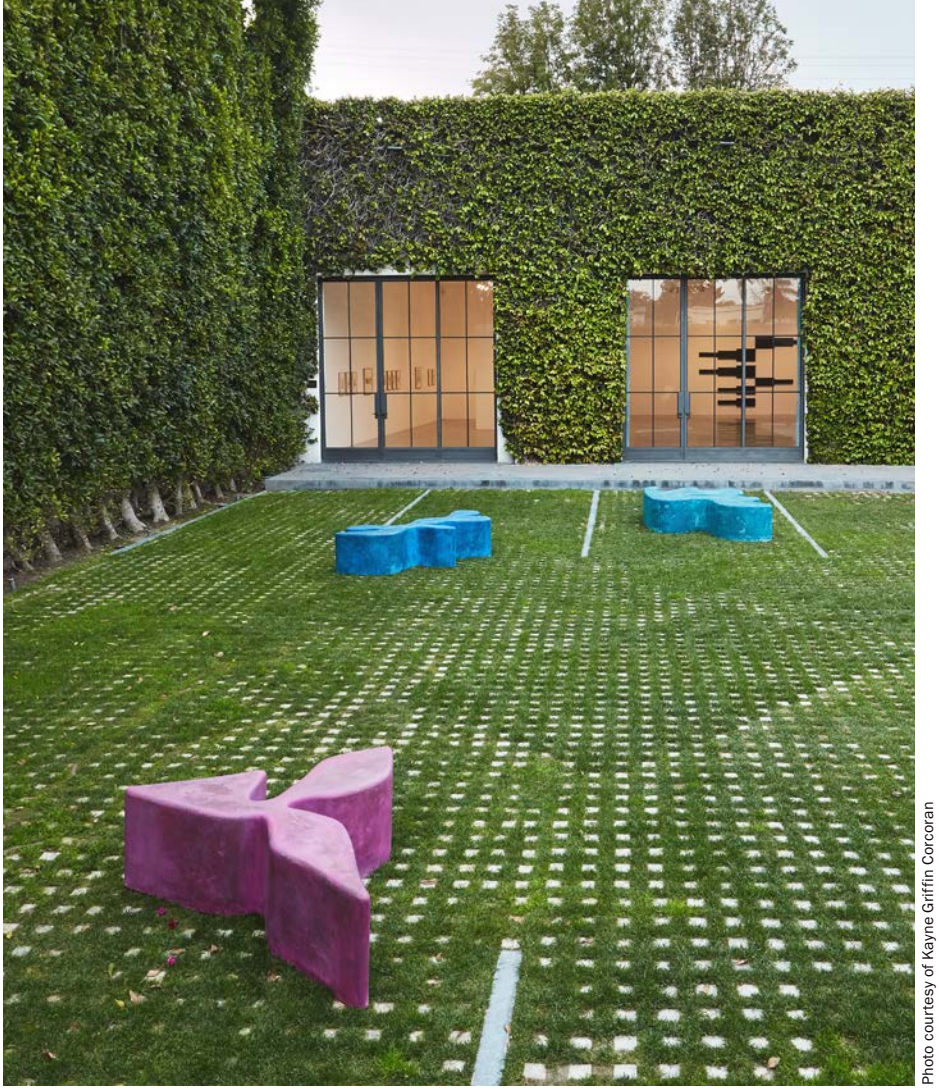

Photo courtesy of Kayne Griffin Corcoran

Photos courtesy of Rob Lan Fabrication

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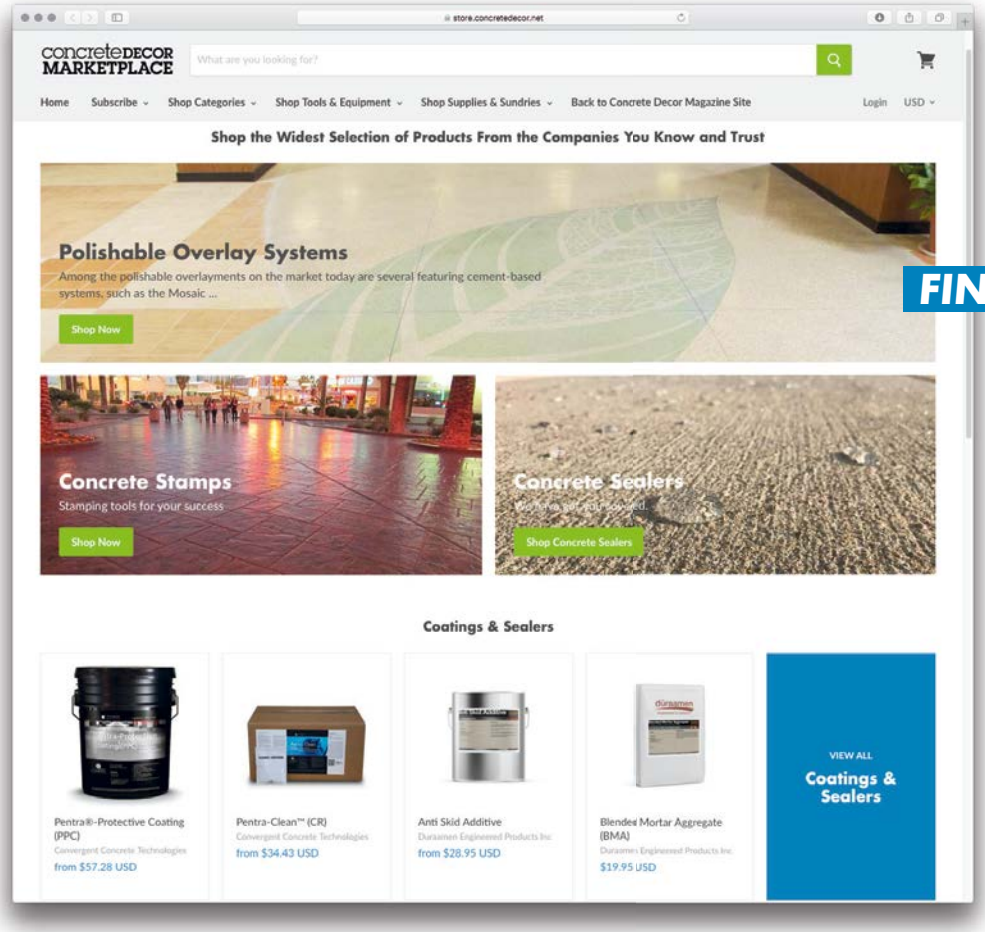

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