

# concrete DECOR®

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April 2018  
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## *Accidental Artisan*

*Full-time career began  
with a DIY project*

local

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## Publisher's Letter



### Dear Readers,

Several weeks ago, a postcard showed up in my mailbox encouraging electric utility customers to apply for a vacancy on their board of directors. My wife nudged me to reply, pointing out it would be a good way to meet new people and get more involved in my community.

So, I responded with a letter, got an interview and was ultimately elected to a public office as a director for the Emerald People's Utility District (EPUD). By the way, this utility company was just recognized as a leading PUD nationwide.

What has followed has been nothing short of an amazing learning opportunity that's opening my eyes to a new industry, new technologies and challenges that will influence construction markets in the years ahead. Building codes are changing and becoming increasingly complex as they move toward improved energy conservation requirements for construction and renovations.

These changes can ultimately limit where decorative concrete products and materials are used on a project or they can present exciting opportunities to elevate our industry's capabilities. Among the inspiring stories that keep our businesses running in high-gear, you'll find an article in this issue on schools built with insulated concrete forms (ICFs). Although there is an assortment of energy-efficient building solutions on the market, it is our job at *Concrete Decor* to focus on "concrete" solutions as the better, more energy efficient and sustainable alternative for construction applications.

There is the tendency in decorative concrete to only orient applications to the horizontal surface. I believe we can all agree that decorative concrete goes far beyond the horizontal plain. However, to compete effectively with other building products, we must prove that decorative concrete is the better and faster alternative. This requires an investment of time and resources from product manufacturers and applicators if we want to effectively tap new markets.

*Concrete Decor* magazine's online resources are a treasure trove of information and insights. I encourage you to take time to visit us at [www.ConcreteDecor.net](http://www.ConcreteDecor.net). Subscribe to our newsletter, read our blog and use our product and training guides to keep yourself up to speed with the changes in our industry. At *Concrete Decor*, it's our business to keep your team running strong.

Enjoy this edition of *Concrete Decor*.

Sincerely,

Bent Mikkelsen  
Publisher



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**On the cover:** The countertops and vertical work done in this coffeehouse in Colorado were among Greyrock Concrete's earliest jobs performed by Steve Gartner and then-partner Greg Kueneke.

Photo courtesy of Greyrock Concrete

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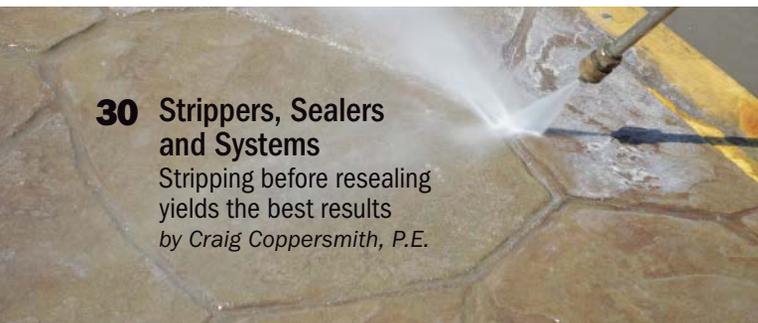
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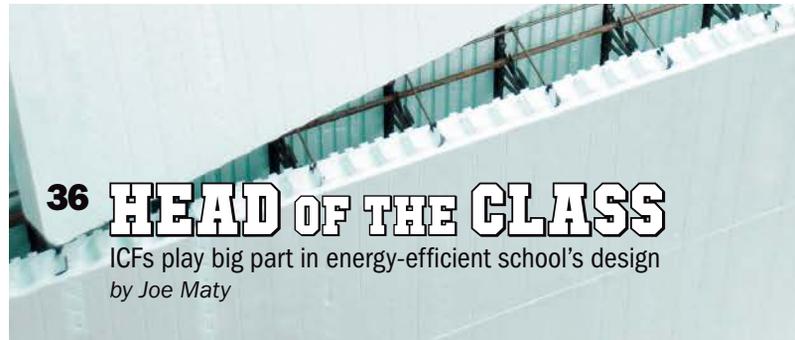
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# Scofield Decorative Concrete Awards 2017 Laud Six Innovative Projects During WOC

by Amy Johnson

“**I**NNOVATION” was the word of the day for Scofield’s 10th annual Decorative Concrete Awards which were presented during the 2018 World of Concrete in Las Vegas. Grand prize-winning “Scofie” projects in six categories were unique in their design and execution, with several recipients pushing the limits of their experience to try new things.

## Artistic

### Business Interiors Floor Covering, Woburn, Massachusetts

Is there a coded message only programmers can decipher in the pattern of Xs in the corridor of Microsoft’s Boston office? If there is, it’s only readable thanks to the precision and accuracy of Business Interiors Floor Covering.

Working with the designer, the company ultimately went through seven different renditions before coming up with something it was confident it could execute well. To start, Business Interiors explained the parameter’s artistic concrete. For example, to match the dot pattern in the carpet tiles the designer asked for dots just  $\frac{1}{8}$  inch in diameter but Business Interiors’ testing showed that dots any smaller than  $\frac{1}{4}$  inch would degrade the stencil and allow the color to bleed.

“We’ve done a number of large format designs before, but this is the first time we’ve gone after detail like this,” says John Gabaree, Business Interiors’ division manager for polished concrete and epoxy flooring.

Three-men crews worked nights applying Scofield Formula One Lithium Densifier and grinding the concrete to 200 grit. Then they carefully placed the stencils, often hand cutting them to make the tiny patterns line up exactly, and applied Scofield Formula One Liquid Dye Concentrate “Storm Cloud.”



Photos courtesy of Scofield

In the beginning they were only able to complete about four sheets (72 square feet) per shift but eventually they got up to about 11 sheets per night, ultimately applying the pattern to about 2,700 square feet of the total 11,000 square feet.

The floor was polished to 800 grit and a Scofield Formula One Guard-W finish coat was applied. Besides the dots, they created chevron stripes and,

of course, the enigmatic Xs. Do they mean anything? Gabaree doesn’t know, but he credits his crew with making sure the pattern is square, clean and crisp, just in case.

“After completing such a challenging job like this,” Gabaree says, “we know there’s no project we would not be able to handle in the future.”

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## Heavy/Highway

### Utility Concrete Products LLC, Morris, Illinois

A cresting wave cast in concrete — that was the architect's solution to the threat of real waves crashing from Lake Michigan at the new Walter Athletics Center to be built by Northwestern University in Evanston, Illinois. The concrete barrier is essential to protect the lakeshore building and the people enjoying its surrounding grounds when the lake gets choppy.

To achieve the multiple curves and tapering in two planes required to replicate a wave, the designers knew that cast-in-place would be nearly impossible. Something that unique could only be achieved in a controlled environment with precise forming — in other words, precast.



Utility Concrete Products cast 109 five-foot-wide segments, many as tall as 20 feet, to create the desired look. The artistry was completed by coloring the mix with custom-modified Scofield Integral Color SG in Sand Buff and finished with a sandblaster to match the building's limestone.



Installation required some creativity, innovation and tight planning. The precast panels were mounted on a cast-in-place kneel wall using both column-base connectors on the land side and splice sleeves on the lake side. This unique system, developed just for this project, allowed the contractor to bolt the panels in place without using an interim bracing system.

Installing the wall as efficiently and quickly as possible was a top priority because work on the building couldn't be completed until the wall was finished. Months of careful preplanning and coordination resulted in a quick fabrication/install time frame and the gorgeous wave wall was installed on time and within budget.

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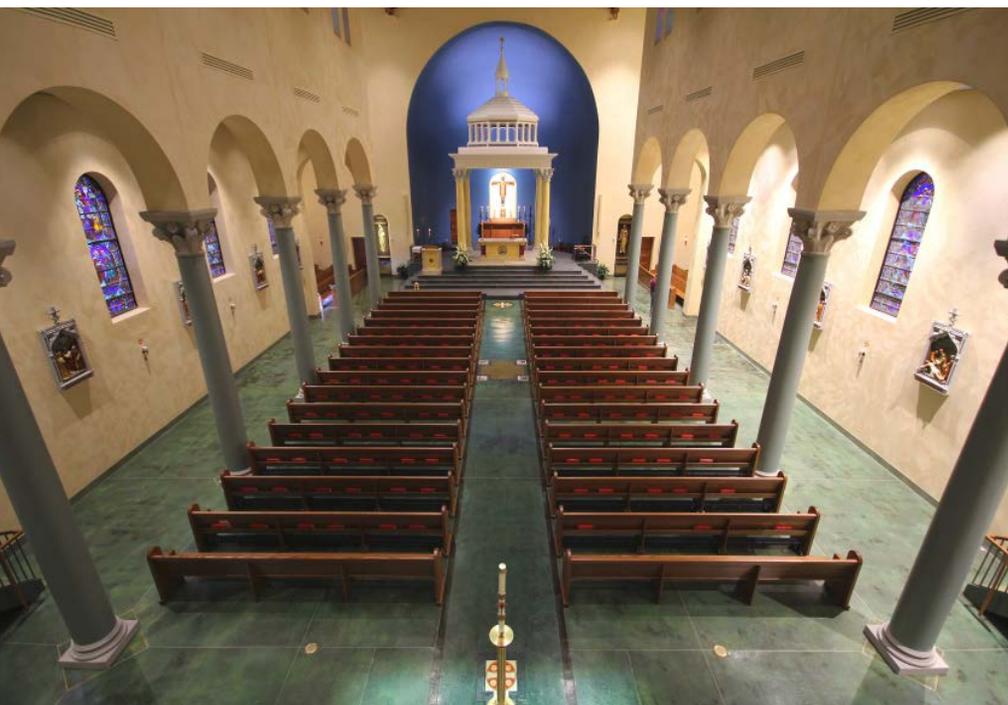
## Stain

### Capitol Decorative Concrete, Piedmont, South Carolina

Commanding attention on a hilltop in Greenville, South Carolina, the new Our Lady of the Rosary church is as impressive inside as it is outside with soaring arches, reclaimed glass windows and a beautiful marbled stained concrete floor. At nearly 16,000 square feet, a marble floor was not in the budget, but fortunately, Victoria Simpson of Capitol Decorative Concrete had the experience and vision to provide an alternative that would both anchor and elevate the whole interior.

Simpson and her colleague, Dean Nash, installed and stained the entire project — organ and choir lofts, entryway and covered porch and, most impressive and challenging of all, the sanctuary. Impressive thanks go to Scofield's Lithochrome Chemstain Classic in both Copper Patina and Fern Green, spraying into each other to create the marble effect.

It was challenging because half the sanctuary sits on grade and half sits on a suspended deck. The two sides cured differently and so took the stain differently. It could



have ended up looking like a line right down the middle of the sanctuary, but Simpson used a misting spray in the seal coat to help the colors blend. She also used the spray to add highlights to other areas of the floor, unifying the overall effect.

Given there was a whole building committee and a general contractor involved in the project, Simpson made a lot of samples and various colors, including Antique Amber and Dark Walnut, were used in different spaces. But in the end, Simpson says, "My favorite color of Copper Patina was the main theme for this beautiful edifice. The color selections made were colors that most people are afraid to try, but it truly was magic as it all came together."

[www.facebook.com/Capitol-Decorative-Concrete-311488289392/](https://www.facebook.com/Capitol-Decorative-Concrete-311488289392/)

# Stamped

## Ozark Pattern Concrete Inc., Lowell, Arkansas

Replacing an old brick patio and steps with stamped concrete is an improvement. Stamped concrete that looks as beautiful and natural as slate goes beyond improvement to enhancement. Ozark Pattern Concrete Inc. did just that for the Hunt residence in Little Rock, Arkansas.

Once the owners made up their minds to use stamped concrete, OPC created a series of 3-by-3-foot samples with different patterns and colors. The final finish was selected by architect Georg Andersen, noted for designing luxury commercial spaces and homes in New York, Arkansas and throughout the country.

Then OPC got to work placing and stamping. They used a slate stamping pattern and colored the concrete with Scofield Lithochrome Color Hardener in Platinum Gray and with Lithochrome Antiquing Release. The seal and detail crews created variation and highlights by hand staining



random stones with Lithochrome Chemstain in different colors and dilutions. They grouted the joints in a natural gray color.

The biggest challenge was creating the 1-inch cantilever edge on the steps. OPC used small, square forms to get that edge to come out over

the top of each stair, just as if it were a slab of stone. Varying the color slightly, changing the direction of the imprinting tool from one stone to another, and grinding and grouting the joints are all extra details that add to the impression that this is the real thing.

[www.ozarkpatternconcrete.com](http://www.ozarkpatternconcrete.com)

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## Polished

### The Spieker Co., Perrysburg, Ohio

“The biggest challenge we faced was working through the cold, snowy Northwest Ohio winter,” says Jeremy Aschemeier, concrete superintendent for The Spieker Co. Winter weather may not be what most contractors expect when polishing interior floors, but the new Hull Prairie Intermediate School under construction in Perrysburg, Ohio, was open and exposed to the elements.

To add to the challenge, the color selected was Black Scofield Formula One Liquid Dye — a beautiful match for Hull Prairie’s black and yellow school colors but so intense it could easily show scratches, flaws and damage.

The Spieker Co. prevented problems by enclosing the building with tarps and using multiple curing blankets. It also used Scofield Proguard Duracover, a removable membrane, to protect the floors from the elements before they were polished and from other trades after they were finished. Aschemeier also credits Husqvarna HiperFlex dry



polishing pads for hiding scratches inherent to the polishing process.

Now the school has the tech-looking, long-lasting, easy-cleaning floor the district wanted when it selected polished concrete over carpet or vinyl. And The Spieker Co. has a unique project to show off.

“I think the reason this project was award winning was because of our crew,” Aschemeier says. “The company is fortunate to have a lot of talented employees that take great pride in their

work. The project manager was very involved and helpful throughout the process. And our material supplier, Brad Chevalier at Chas. E. Phipps Co., was instrumental to our success. Every time we had a problem he was there with a solution. We are very lucky to be surrounded by ambitious and successful people.” Students in Perrysburg are lucky, too.

[www.spiekercompany.com](http://www.spiekercompany.com)

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## Integral Color

### Hemma Concrete Inc., Marietta, Georgia

It’s attention to the small things that counts in a project as large as the new Northeast Georgia Medical Center in Gainesville, Georgia. First was the color. The customer wanted a tan/brown concrete for walkways and stairs to complement the colorful brick exterior.

The general contractor worked with the architect to choose just the right integral color — Cox Beige, a custom formulation of Scofield’s Chromix Admixtures for Color-Conditioned Concrete. They also settled on a light acid-etched exposed aggregate finish with natural stone inlay accents.

From there, the genius was in the details. Consistency was key. Hemma Concrete had to make sure all the forms were consistent and that the mix was the same from truck to truck. Hardscape Project Director Carrie Roberts-Poppe says, “We count on the fact that the concrete trucks will come on time so we can do a continuous, consistent pour. We had extra manpower on this job to check

forms while the pour was going on.”

Project Superintendent Sehrudin Sahbaz had to keep three balls in the air — managing the workers checking forms, the crews finishing the concrete and the company delivering the concrete. In particular, the stairs — given their size, color and orientation — had to be planned out correctly and precisely. “Consistent,

consistent, consistent — that was a make or break factor on this job.”

In the end, Roberts-Poppe says it was the team’s attention to detail, a timely and consistent concrete supplier and high-quality Scofield products that made this project a winning job. “It could not have been done if one of those pieces had fallen short.”

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# 2018 PRODUCT GUIDE

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Use this guide to identify contact information for manufacturers that provide products and equipment. Search for companies by product category in the guide that starts on page 13. If you wish to look for companies that make environmentally friendly products, use the guide on page 19 in this magazine.

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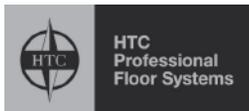
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Inter-Tool LLC  
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Quikspray Inc.  
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Scofield  
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**N**

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**O**

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Laticrete Spartacote  
McKinnon Materials  
Solomon Colors Inc.  
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Westcoat

**Overlays – Stampable**

Arizona Polymer Flooring  
Butterfield Color Inc.  
ChemSystems Inc.  
Elite Crete Systems  
H & C Products Group  
Increte Systems/Euclid Chemical  
Kingdom Products  
McKinnon Materials  
Scofield  
Solomon Colors Inc.  
Stone Edge Surfaces  
SureCrete  
W.R. Meadows  
Walttools  
Westcoat

**P**

**Patching Compounds**

Advanced Floor Products, a division  
of Curecrete Distribution Inc.  
Jon-Don  
Key Resin Co.  
Laticrete Spartacote  
McKinnon Materials  
Nox-Crete Products Group  
Roadware Inc.  
Stone Edge Surfaces  
SureCrete  
W.R. Meadows  
Westcoat

**Paver Sands**

Increte Systems/Euclid Chemical

**Pigment**

ChemSystems Inc.  
The Concrete Countertop Institute  
Increte Systems/Euclid Chemical  
Key Resin Co.  
McKinnon Materials  
Prism Corp.  
Z Counterform/Concrete  
Countertop Solutions

**Pigment – Dispensing Equipment**

Increte Systems/Euclid Chemical  
Prism Corp.  
Scofield

**Pigment – Iron Oxide**

Alabama Pigments Co.  
Butterfield Color Inc.  
Increte Systems/Euclid Chemical  
Kingdom Products  
McKinnon Materials  
Prism Corp.  
SureCrete  
Walttools

**Placers**

Kraft Tool Co.

**Polishing Machines**

Advanced Floor Products, a division  
of Curecrete Distribution Inc.  
Aztec Products  
Barnsco Decorative Concrete Supply  
Concrete Polishing HQ  
Concrete Polishing Solutions  
GranQuartz  
HTC  
Husqvarna Construction Products  
Inter-Tool LLC  
Jon-Don  
Pullman Ermator  
Scanmaskin USA Inc.  
c/o Jon Don Inc.  
Superabrasive  
Surtec Inc.  
U.S. Saws

**Polishing Pads & Tooling**

Advanced Floor Products, a division  
of Curecrete Distribution Inc.  
Ameripolish  
Aztec Products  
The Concrete Countertop Institute  
Concrete Polishing HQ  
Concrete Polishing Solutions  
GranQuartz  
HTC  
Husqvarna Construction Products  
Inter-Tool LLC  
Jon-Don  
Key Resin Co.  
Scanmaskin USA Inc.  
c/o Jon Don Inc.  
Superabrasive  
Surtec Inc.  
U.S. Saws  
Z Counterform/Concrete  
Countertop Solutions

**Polyspartics**

Arizona Polymer Flooring  
Barnsco Decorative Concrete Supply  
Elite Crete Systems  
Increte Systems/Euclid Chemical  
Jon-Don  
Key Resin Co.  
McKinnon Materials  
Redi-Mix Colors & Sealers  
Seagrave Coatings  
SpeedCove Inc./  
Solid Rock Enterprises  
SureCrete  
Surface Koatings Inc.  
Versatile Building Products/  
GarageCoatings.com  
Westcoat

**Polyurea**

Advanced Floor Products, a division  
of Curecrete Distribution Inc.  
Arizona Polymer Flooring

Concrete Polishing HQ  
GranQuartz  
Jon-Don  
SpeedCove Inc./  
Solid Rock Enterprises  
Surface Coatings Inc.  
U.S. Saws  
Versatile Building Products/  
GarageCoatings.com

### Power Trowels

Husqvarna Construction Products  
Kraft Tool Co.  
Scanmaskin USA Inc.  
c/o Jon Don Inc.  
Superabrasive

### Protective Clothing

Jon-Don

### Pump Sprayers

Ameripolish  
Graco Inc.  
H.D. Hudson Manufacturing Co.  
Jon-Don  
Quikspray Inc.

### Pumps

Graco Inc.  
U.S. Saws

## R

### Radiant Heating Systems

ISI Building Products  
Laticrete Spartacote

### Reinforcing Mesh & Lath

Key Resin Co.  
Westcoat

### Release Agents

Arizona Polymer Flooring  
Butterfield Color Inc.  
H & C Products Group  
Increte Systems/Euclid Chemical  
Kingdom Products  
Laticrete Spartacote  
McKinnon Materials  
Polytek Development Corp.  
Prism Corp.  
Scofield  
Solomon Colors Inc.  
Stone Edge Surfaces  
SureCrete  
Surface Coatings Inc.  
W.R. Meadows  
Walttools

### Respirators

Jon-Don

### Retardants

Scofield  
W.R. Meadows

### Rock-making Materials

Stone Edge Surfaces  
Walttools

### Rollers

Husqvarna Construction Products  
Jon-Don  
Key Resin Co.

### Rollers – Spiked

Key Resin Co.  
Kraft Tool Co.

### Rollers – Texture

Increte Systems/Euclid Chemical  
Jon-Don

## S

### Safety Equipment

GranQuartz  
Jon-Don  
Pullman Ermator

### Sand – Decorative

American Specialty Glass

### Sandblasting

American Specialty Glass  
Graco Inc.  
Pullman Ermator

### Saw Blades

GranQuartz  
Husqvarna Construction Products  
Jon-Don  
U.S. Saws

### Saws

Husqvarna Construction Products  
Jon-Don  
Pullman Ermator  
U.S. Saws

### Scarifiers

All Star Rents Prep & Polish  
Division  
Husqvarna Construction Products  
Jon-Don  
Pullman Ermator

### Scrapers

All Star Rents Prep & Polish  
Division  
Jon-Don  
Kraft Tool Co.

### Screeds

Husqvarna Construction Products  
Kraft Tool Co.  
Trade Tool Innovations LLC

### Screeds – Power

Husqvarna Construction Products  
Trade Tool Innovations LLC

### Scrubbing Machines

All Star Rents Prep & Polish  
Division  
Aztec Products  
Jon-Don  
Surtec Inc.

### Sealers – Countertop

The Concrete Countertop Institute  
Increte Systems/Euclid Chemical  
Key Resin Co.  
Kingdom Products  
McKinnon Materials  
Nox-Crete Products Group  
Redi-Mix Colors & Sealers  
Seagrave Coatings  
SureCrete  
Surface Coatings Inc.  
Trinic  
Walttools  
Z Counterform/Concrete  
Countertop Solutions

### Sealers – Flooring

Advanced Floor Products, a division  
of Curecrete Distribution Inc.

All Star Rents Prep & Polish  
Division

Ameripolish  
Arizona Polymer Flooring  
Aztec Products  
Butterfield Color Inc.  
ChemSystems Inc.  
Concrete Polishing HQ  
Concrete Polishing Solutions  
Elite Crete Systems  
GranQuartz  
H & C Products Group  
Increte Systems/Euclid Chemical  
Jon-Don  
Key Resin Co.  
Kingdom Products  
Laticrete Spartacote  
McKinnon Materials  
Nox-Crete Products Group  
Redi-Mix Colors & Sealers  
Runyon Surface Prep Rental & Supply  
Scofield  
Seagrave Coatings  
Solomon Colors Inc.  
SpeedCove Inc./  
Solid Rock Enterprises  
SureCrete  
Surface Coatings Inc.  
Surtec Inc.  
Trinic  
Versatile Building Products/  
GarageCoatings.com  
W.R. Meadows  
Walttools  
Westcoat

### Sealers – Pigmented

Elite Crete Systems  
Increte Systems/Euclid Chemical  
Key Resin Co.  
McKinnon Materials  
Nox-Crete Products Group  
Scofield  
Seagrave Coatings  
SpeedCove Inc./  
Solid Rock Enterprises  
SureCrete  
Surface Coatings Inc.  
Westcoat

### Sealers – UV-Cured

SpeedCove Inc./  
Solid Rock Enterprises  
Trinic

### Shotblasting Equipment

Concrete Polishing HQ  
Graco Inc.  
Jon-Don  
Pullman Ermator  
Jon-Don  
Pullman Ermator

### Shotblasting Machines

Graco Inc.

### Shotcrete

Quikspray Inc.

### Slip-resistant Additives

H & C Products Group  
Increte Systems/Euclid Chemical  
Jon-Don



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- Resistant to extreme temperature conditions
- Non-reemulsifiable
- Superior bonding capabilities
- Excellent freeze/thaw resistance
- Environmentally friendly and safe
- Highly versatile
- Easy to use
- Non-toxic
- VOC compliant



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[www.super-krete.com/concretedecor-april](http://www.super-krete.com/concretedecor-april)



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Key Resin Co.  
McKinnon Materials  
Nox-Crete Products Group  
SureCrete  
W.R. Meadows  
Westcoat

**Slurry Management**

Husqvarna Construction Products  
Jon-Don  
Prism Corp.  
Pullman Ermator  
Surtec Inc.

**Spiked Shoes**

Jon-Don  
Key Resin Co.  
Kraft Tool Co.  
McKinnon Materials

**Sprayers**

All Star Rents Prep & Polish Division  
BroadcastCoating.Tools  
Concrete Polishing HQ  
H.D. Hudson Manufacturing Co.  
Jon-Don  
Kraft Tool Co.  
McKinnon Materials

**Spreaders**

BroadcastCoating.Tools  
Kraft Tool Co.  
McKinnon Materials  
Trade Tool Innovations LLC

**Squeegees**

All Star Rents Prep & Polish Division  
Jon-Don  
Key Resin Co.  
Kraft Tool Co.  
McKinnon Materials

**Stain Block**

Jon-Don  
Nox-Crete Products Group

**Stains – Acid & Reactive**

Advanced Floor Products, a division of Curecrete Distribution Inc.  
Arizona Polymer Flooring  
Butterfield Color Inc.  
ChemSystems Inc.  
Elite Crete Systems  
H & C Products Group  
Increte Systems/Euclid Chemical  
Kingdom Products  
Scofield  
Solomon Colors Inc.  
SureCrete  
Surface Koatings Inc.  
Walttools  
Westcoat

**Stains – Solid Color**

Advanced Floor Products, a division of Curecrete Distribution Inc.  
All Star Rents Prep & Polish Division  
ChemSystems Inc.  
GranQuartz  
H & C Products Group  
Increte Systems/Euclid Chemical  
Prism Corp.

Redi-Mix Colors & Sealers  
Scofield  
Solomon Colors Inc.  
SpeedCove Inc./  
Solid Rock Enterprises  
Surface Koatings Inc.  
Z Counterform/Concrete  
Countertop Solutions

**Stains – Translucent**

Advanced Floor Products, a division of Curecrete Distribution Inc.  
All Star Rents Prep & Polish Division  
Elite Crete Systems  
H & C Products Group  
Increte Systems/Euclid Chemical  
Jon-Don  
L & M Industries LLC/Sim Stain  
Concrete Stain  
McKinnon Materials  
Nox-Crete Products Group  
Prism Corp.  
Redi-Mix Colors & Sealers  
Scofield  
Solomon Colors Inc.  
SureCrete  
Surface Koatings Inc.  
Westcoat

**Stains – Water-based**

Advanced Floor Products, a division of Curecrete Distribution Inc.  
All Star Rents Prep & Polish Division  
Arizona Polymer Flooring  
Barnsco Decorative Concrete Supply  
Butterfield Color Inc.  
H & C Products Group  
Increte Systems/Euclid Chemical  
Jon-Don  
Kingdom Products  
L & M Industries LLC/Sim Stain  
Concrete Stain  
McKinnon Materials  
Prism Corp.  
Redi-Mix Colors & Sealers  
Scofield  
Solomon Colors Inc.  
SpeedCove Inc./  
Solid Rock Enterprises  
SureCrete  
Trinic  
Walttools  
Westcoat  
Z Counterform/Concrete  
Countertop Solutions

**Stamps & Texturing Tools**

Barnsco Decorative Concrete Supply  
Butterfield Color Inc.  
Increte Systems/Euclid Chemical  
Scofield  
Solomon Colors Inc.  
Stone Edge Surfaces  
Walttools  
Z Counterform/Concrete  
Countertop Solutions

**Stencils**

Increte Systems/Euclid Chemical  
McKinnon Materials

**Step Liners**

Butterfield Color Inc.  
Walttools

**Strippers**

Advanced Floor Products, a division of Curecrete Distribution Inc.  
Increte Systems/Euclid Chemical  
Jon-Don  
Nox-Crete Products Group  
Surface Koatings Inc.  
Surtec Inc.  
Walttools

**Surface Protection**

Advanced Floor Products, a division of Curecrete Distribution Inc.  
Inter-Tool LLC  
Jon-Don  
Scofield

**T**

**Tampers**

Butterfield Color Inc.  
Kraft Tool Co.

**Terrazzo**

Concrete Polishing HQ  
Husqvarna Construction Products  
Inter-Tool LLC  
Key Resin Co.  
Pullman Ermator  
Seagrave Coatings

**Testing & Measuring Equipment**

Advanced Floor Products, a division of Curecrete Distribution Inc.  
Tramex Meters  
Wagner Meters

**Texture Rollers**

Butterfield Color Inc.  
Polytek Development Corp.  
Walttools

**Toll Blending Services**

Key Resin Co.

**Training Products**

All Star Rents Prep & Polish Division  
The Concrete Countertop Institute  
Concrete Polishing HQ  
Fox Blocks  
Stone Edge Surfaces  
Trinic  
Wagner Meters

**Trowels**

Jon-Don  
Key Resin Co.  
Kraft Tool Co.  
McKinnon Materials

**U**

**Underlayments**

GranQuartz  
Jon-Don  
Key Resin Co.  
Kingdom Products  
Laticrete Spartacote  
W.R. Meadows  
Westcoat

**Urethanes**

Arizona Polymer Flooring  
The Concrete Countertop Institute  
H & C Products Group  
Increte Systems/Euclid Chemical  
Jon-Don  
Key Resin Co.  
McKinnon Materials  
Redi-Mix Colors & Sealers  
Seagrave Coatings  
SureCrete  
Surface Koatings Inc.  
Surtec Inc.  
Versatile Building Products/  
GarageCoatings.com  
Walttools  
Westcoat

**V**

**Vacuums**

Husqvarna Construction Products  
Superabrasive  
U.S. Saws  
Villo USA Inc.

**Vapor Barriers**

ISI Building Products  
Key Resin Co.  
W.R. Meadows

**Vertical Overlays**

Barnsco Decorative Concrete Supply  
Butterfield Color Inc.  
Increte Systems/Euclid Chemical  
Key Resin Co.  
McKinnon Materials  
Solomon Colors Inc.  
Stone Edge Surfaces  
Walttools

**Vinyl Chips**

Arizona Polymer Flooring  
Barnsco Decorative Concrete Supply  
BroadcastCoating.Tools  
Increte Systems/Euclid Chemical  
Jon-Don  
Key Resin Co.  
Seagrave Coatings  
SureCrete

**W**

**Wall Forms**

Increte Systems/Euclid Chemical  
Walttools

**Water Repellents**

Ameripolish  
H & C Products Group  
Kingdom Products  
Nox-Crete Products Group  
Redi-Mix Colors & Sealers  
Scofield  
Surface Koatings Inc.  
W.R. Meadows

**Waterproofing Systems & Membranes**

BroadcastCoating.Tools  
Key Resin Co.

The 2018 Product Guide is also available online:  
[www.ConcreteDecor.net/Product-Guide](http://www.ConcreteDecor.net/Product-Guide)

# Green Products

The Green Products list showcases manufacturers that make decorative concrete materials and tools that are environmentally friendly and promote sustainable construction practices.

Use this guide to identify manufacturers that provide green products and equipment.

Then, look up the manufacturer's contact information in the Company Index, which starts on page \_\_\_ in this magazine.

## A

### Applicators

Surtec Inc.

## B

### Buffer — Floor

Surtec Inc.

### Burnisher

Inter-Tool LLC

## C

### Cleaning Products & Equipment

Advanced Floor Products, a division of Curecrete Distribution Inc.  
Surtec Inc.

### Coatings

SpeedCove Inc./  
Solid Rock Enterprises  
SureCrete

### Coving

SpeedCove Inc./  
Solid Rock Enterprises

## D

### Densifiers

Advanced Floor Products, a division of Curecrete Distribution Inc.

## E

### Epoxy

Key Resin Co.  
SpeedCove Inc./  
Solid Rock Enterprises

## F

### Finishing Tools

Inter-Tool LLC

### Floor Strippers

Surtec Inc.

## G

### Garage Floor Coatings

Key Resin Co.

### Grinders

Inter-Tool LLC

## M

### Metallic Coatings & Additives

Key Resin Co.

## O

### Overlays

SureCrete

## P

### Polishing Machines

Inter-Tool LLC

### Polishing Pads & Tooling

Inter-Tool LLC

### Polyaspartics

SpeedCove Inc./  
Solid Rock Enterprises

### Polyurea

SpeedCove Inc./  
Solid Rock Enterprises

## S

### Sealers — Countertop

SureCrete

### Sealers — Flooring

Advanced Floor Products, a division of Curecrete Distribution Inc.  
Key Resin Co.

### Slurry Management

Surtec Inc.

### Stains — Translucent

L & M Industries LLC/  
Sim Stain Concrete Stain

### Stains — Water-based

L & M Industries LLC/  
Sim Stain Concrete Stain  
SureCrete

## T

### Terrazzo

Key Resin Co.

## U

### Urethanes

SureCrete

# THE SURTEC SYSTEM

www.surtecsystem.com



This beautiful floor is the result of the Surtec System for Polished Concrete that uses the unbeatable combination of Surtec's Fully Impregnated Diamonds and Surtec's Insta Guard, THE guard product for polished concrete that truly resists stains. Great results made easy by Surtec.



## Surtec's DIAMOND PADS & PUCKS

### OUTLAST AND OUT-PERFORM THE COMPETITION

Each fiber of our Fully Impregnated Pad is coated with diamonds throughout the entire thickness of the pad. We've also filled the gap between traditional diamond pucks and diamond pads with Surtec's Mid-Range Pad, it provides faster cut, hone & polish. **Request more info**

### Polished Concrete PROTECTED with "INSTA GUARD FORMULA"



Polished Concrete, UN-PROTECTED

## Surtec's INSTA GUARD

### HIGH GLOSS PROTECTIVE MICRO-GUARD

Providing outstanding floor protection, Insta Guard is easy to apply & easy to maintain. Insta Guard develops rapid hardness, extreme stain, scratch and scuff resistance. Insta Guard also has excellent flow & leveling properties.

**Why settle for anything less?**

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CONTACT US TODAY 800 877 6330**



Clark Branum of Diamatic demonstrates one of his company's newest additions, the Velox power trowel, during this year's World of Concrete.

# World of Concrete 2018

## Annual rite of winter was ripe with innovation

by Stacey Enesey Klemenc

**W**ORLD of Concrete 2018 exceeded everyone's expectations in January by attracting more than 58,000 registered professionals and nearly 1,600 participating companies, including about 300 brand-new exhibitors. The 43rd such show to date, the signature event encompassed almost 750,000 square feet of exhibit space, of which Decorative Concrete LIVE! claimed nearly 4,300 square feet as its own in a display of decorative concrete a la retail style. Decorative Concrete LIVE! is brought to you annually by *Concrete Decor* magazine, the Concrete Decor RoadShow and a host of sponsoring partners.

With so many things to see and experience, it was hard to take it all in and a real challenge to keep up the pace during the show's five-day marathon. Here's a sampling of the products, machinery and tools that wowed *Concrete Decor* staff and others who made the annual trek to Las Vegas.

### Machinery

Riding on the wave of the power trowel's popularity, Diamatic demonstrated its Velox power trowel with its patent-pending active planetary gear box. With this made-in-the-USA ride-on machinery and the Silex Power Trowel Polishing System, contractors can polish 4,000-5,000 square feet per hour.

[www.diamaticusa.com](http://www.diamaticusa.com)

Aztec showed off its new LowRider, a high-speed propane burnisher with an ultra-low profile designed to burnish hard-to-reach areas. Options include a built-in dust control feature that meets certain green building credit requirements, as well as a spray-mist feature that can shave off time and labor where maintenance is concerned.

Also in Aztec's procession was the versatile Refresher (*above*), a propane-powered machine that can be used to strip, deep scrub, hone, polish and burnish concrete and terrazzo floors.

[www.aztecproducts.com](http://www.aztecproducts.com)



With a very innovative take on grinders, Prep Tech Systems has come up with an interchangeable grinding system that should entice small business owners trying to build up their fleet. The company has 25-, 30- and 34-inch heads that all fit on the same-size frame. So rather than buying a complete machine if you need something larger or smaller, you can simply purchase the needed head.



[www.preptechsystems.com](http://www.preptechsystems.com)

One vacuum system that got the crowds buzzing was attached to the CPS Rover, a ride-on grinder/polisher/burnisher introduced at the show last year by Concrete Polishing Systems. The new self-contained, labor-saving VacPac lets an operator vacuum as he rides along, without having to stop and move cumbersome hoses. The vacuum bag just needs to be changed when it's full. CPS also debuted Aqua Hybrid Resins, a new line of tooling designed for wet polishing.



[www.go2cps.com](http://www.go2cps.com)

Superabrasive's big hit this year was a smaller, lighter, customer-requested grinder. The 20-inch Lavina 20G-X propane-powered grinder is the first of a new generation of machines with many new features, including a closed-loop fuel-management system, a variable-speed engine, a dust suppression/misting system and a completely redesigned grinding head with low-friction chain gear planetary drive.



[www.superabrasive.us](http://www.superabrasive.us)

Graco's ToughTek CM20 was put to work at Decorative Concrete LIVE! A real labor- and timing-saving machine, the continuous mixer eliminates measuring and adding water by hand. Just set the water flow rate for a preblended mix, pour in the bag's contents and the machine automatically churns away.



[www.graco.com](http://www.graco.com)

## ARE YOU USING THE RIGHT MIXER FOR YOUR JOB?

- Clays
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- Primers & Sealers
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THE GEAR-DRIVEN ADVANTAGE

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\*Based on approved credit application

# PRODUCT NEWS

## Tools

You'll never have to wonder the whereabouts of the Bosch Brute Turbo Breaker Hammer with its GPS tracker that pinpoints its location 24/7. The tracking device, which is also available beginning in May as a retrofit for current Bosch SDS-max hammers, automatically charges when the tool is plugged in. Other notable newbies include the Bosch GWS18V-45C grinder, equipped with a powerful brushless motor and advanced safety features such as automatic shutoff if the tool is dropped or jammed. It also has plug-in connected-ready capability and can interface with Bosch's optional Bluetooth. In the vacuum department, Bosch reports vacuum sales have increased more than 1,000 percent from last year because of the new OSHA standard. And finally, the Bosch Blaze outdoor lasers are designed to provide accurate measurements in any kind of light. They rely on a 5.0-megapixel camera to find virtually any laser target at up to 400 feet away. One of the versions stores photos on the device.



[www.boschtools.com](http://www.boschtools.com)



At the Kraft Tool booth, comfort was at the forefront of the company's tool line as it expanded its offerings in cork-handled tools to include edgers and groovers. The company's Elite Series tools, which includes cork-handled trowels and now cork-handled floats, are already broken in when they arrive and are ready to use out of the box.

[www.krafttool.com](http://www.krafttool.com)

Among DeWalt's newest offerings was the 9-inch 60-volt Max Cut-Off Saw, part of the company's growing Flexvolt System that offers "the freedom of power without gas." The saw, which can cut up to 3/4 inches deep, can be used in both horizontal and vertical positions. Another Flexvolt product line, the SDS Max hammers, includes "the highest performing rotary hammer on the market." It's outfitted with the E-Clutch System, a bind-up control feature that senses a stall during use and manages torque accordingly. To better keep up with all the battery-powered tools, DeWalt introduced the 4-Port Fast Charger that can be used to recharge a wide variety of batteries, including four Flexvolt batteries in one hour. All in all, DeWalt debuted 100 new power tool, accessory, storage and anchoring solutions, including the newest 20-volt Max Bluetooth-enabled green and red rotary lasers.



[www.dewalt.com](http://www.dewalt.com)

Bon Tool debuted a heavy-duty PVC Bull Float Carrying Case which holds one 8-inch bull float or channel float with a bracket attached and four handles. Its built-in feet keep the case upright on level surfaces.



[www.bontool.com](http://www.bontool.com)

## Kipper Crete's KPR-8.5-HH

*The First Hand Held Mini Power Trowel In The Industry*



- No grinding
- Smooth as glass finish in one day
- Reduce labor costs
- Goes vertical



[www.kippercrete.com](http://www.kippercrete.com)

Smith Performance Sprayers unveiled its new 2-gallon acid sprayer equipped with acid-resistant seals and a pressure release valve for safety. It's also outfitted with a quartz glass-weighted flexible dip tube that sways when the sprayer is tilted to ensure contact with the contents inside. The company maintains it's the only company in the U.S. that manufactures a handheld acid mister.



[www.smithperformancesprayers.com](http://www.smithperformancesprayers.com)

Jitterbugging will be a thing of the past with the Rattle Stick, a concrete vibration tool that can be used with floats, jointers, edgers and screeds. Now, it's more powerful than it's ever been with the company's new Super Snake upgrade and Slump Buster. The stick also now comes in an array of bright colors.

[www.rattlestick.net](http://www.rattlestick.net)

### Coatings and related products

From Hybrid Coating Technologies, the Green Polyurethane line offers installers nontoxic products that protect a floor with just one coat. Of particular interest is GPEC a new monolithic epoxy-urethane that's many times over stronger than traditional concrete and even more durable than polymer concrete. It also has other marks in the plus column. Rather than looking synthetic, it looks natural and can be polished. And the product is environmentally friendly with its zero VOCs and isocyanates formulation.



[www.hybridcoatingtech.com](http://www.hybridcoatingtech.com)

Butterfield Color was out in full force with an array of new products, including Clear Guard First Seal, a penetrating sealer formulated to go on unsealed concrete as early as 48 hours after it's placed, and a brand-new evaporation retarder. Primarily designed to be used on hot or windy days, TEC Film — as in Topical Evaporation Control — slows down moisture evaporation during the concrete finishing process. This attribute makes it a welcome addition when stamping concrete as it effectively reduces surface cracking at the edges of grout lines. Speaking of stamps, Butterfield also showed off its new stamp and texture skin, a 9-by-54-inch Bluestone and a Travertine Texture.



[www.butterfieldcolor.com](http://www.butterfieldcolor.com)



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# PRODUCT NEWS



The Concrete Protection Process developed by Redi-Mix Colors was demonstrated during WOC at the Decorative Concrete LIVE! exhibit. The brand-new system, which aims to protect areas such as quick service restaurant's drive-throughs, goes down in four steps: clean and prep surface, apply black stain, coat with specially formulated urethane and finish with a proprietary abrasion-resistant product. The stain mitigation and abrasion resistance of this promising process aims to keep dining establishment grounds as pristine as the day they opened.

[www.redimixcolors.com](http://www.redimixcolors.com)

Also unveiled at Decorative Concrete LIVE!, the Speedymason mortar bed panel system offers a quick and easy method for contractors to install thin brick on a new or existing building's exterior or interior wall. The patent-pending panel made in Wisconsin features brick seating for each row of brick. Once the first panel is level, you're good to go. No weeping system behind the panel or special tools are needed to install.



[www.speedymason.com](http://www.speedymason.com)

If you've been looking for a way to get rid of oil stains, Ameripolish has a solution. Its Oil Ingester is an active enzyme-based product that lives off the oil without damaging or affecting what's underneath, be it a colorant, sealer or stain protector. It's biodegradable and can be left on the surface for days until it gets the job done.

[www.ameripolish.com](http://www.ameripolish.com)



Nearby in the same lot, SealKrete showed off its newest product, StrataShell, which was drizzled on top a black and blue metallic base coat of Epoxy-Shell 1000 while it was still wet to create a shiny reflective floor. The company also presented Flex-Coat, a primer and base coat rolled into one that works well in a wide range of temperatures.

[www.seal-krete.com](http://www.seal-krete.com)

Mapei introduced a bevy of new products to protect and restore concrete, including Planitop 18 TG, a trowel-grade cementitious repair mortar that gains strength rapidly. Treated areas can be open to traffic in as little as two hours after application. The one-component mortar is best suited for horizontal concrete repairs from 1/2 to 2 inches thick. The company also debuted Topcem Pronto, a screedable mortar with more than 60 minutes of working time. It can be applied from 3/8 to 2 inches using a float or a screed. It's good for repairing interior and exterior installations such as sidewalks, balconies and walkways.

[www.mapei.com](http://www.mapei.com)



Among the new products Quikrete displayed was an improved formulation of Concrete Resurfacer. The miracle product that renews old worn surfaces is now longer working, produces a smoother finish and delivers three times greater bond strength.

[www.quikrete.com](http://www.quikrete.com)





Hi-Tech Systems displayed how stealthy its Spall-TX3 could be. You can barely see where the polyurea concrete repair material was used on this surface as it literally makes the repaired area disappear. This rapid-set, 100 percent solids material is designed to rebuild and repair broken control joints and spalled concrete. On top of that, it's polishable.

[www.hitechpolyurea.com](http://www.hitechpolyurea.com)

Scofield debuted a new line of solvent-based acrylic sealers that are high solids, high gloss, durable and UV resistant. They were developed to beautifully protect all walks of concrete, from plain, integrally colored and stamped to acid stained and exposed aggregate. Also for aggregates, Scofield's new Lithocast Surface Retarder can consistently deliver an exposed aggregate finish — a fantastic look for both residential and commercial customers. The spray-applied surface-set retarder allows users to easily produce variable-etched concrete surfaces. Available in six formulations, each one is color-coded with a fugitive dye that disappears after application, allowing you to see how much you apply where.

[www.scofield.com](http://www.scofield.com)

### Accessories

The design potential for freshly poured concrete just got wider thanks to Concrete Dimensions, a new line of Brickform stencils from Solomon Colors that offers custom designs as well as a selection of compass roses, medallions and intricate borders. The highly durable urethane stencils are designed to be rolled up after use while retaining their shape and flexibility and reused hundreds of times. Simply float them in and pull them up the next day to reveal clean, crisp imprints.



[www.brickform.com](http://www.brickform.com)

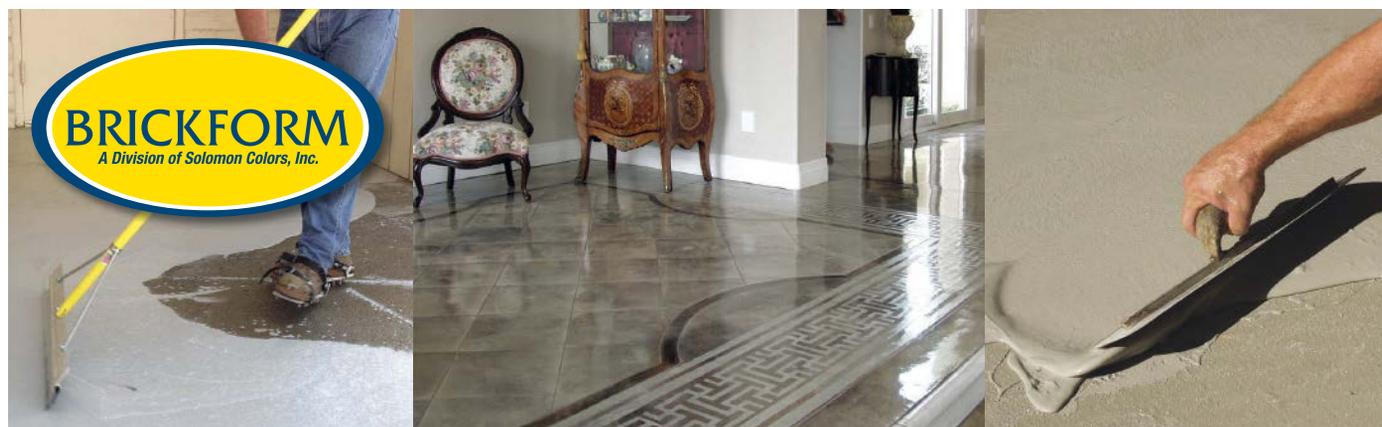
If you're in the market for a vibrator, Vibco Vibrators has a line that may fill the bill. Stik-It concrete vibrator mounts attach to concrete forms without brackets, welding or drilling. Using an air system to create suction, they work well with all types of concrete forms including insulated concrete forms, concrete countertops and curved columns and footings. The vibrators and mounts are available in various sizes.

[www.vibco.com](http://www.vibco.com)

One of the chicest accessories on the floor had to be the Veratti Tango line of safety glasses from Encon Safety Products. Some of these unisex spectacles are specially coated to absorb moisture so they don't fog up when things get steamy. They also have a ratcheting template to ensure a better fit.



[www.enconsafety.com](http://www.enconsafety.com)



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[www.brickform.com](http://www.brickform.com)

# Saving the Slab

## Everything you need to know about evaporation retardants and finishing aids

by Greg Iannone

**W**ITH spring here and summer fast approaching, I feel inclined to address an issue which, unfortunately, I see all too often — weakened, flaking, cracking and discolored concrete. These conditions can be almost always traced back to improper finishing practices and the improper use of water during concrete's finishing stage.

There have been articles, specifications and tests that have all shed light on the improper use of water during the finishing stage. It's clear that adding even a little bit of water can change the water-to-cement (w/c) ratio at the surface of the concrete and promote shrinkage, discoloration, cracking, a weakened surface and, eventually, scaling or flaking.

All of this can be averted by following proper finishing protocols and avoiding the use of water while finishing concrete. I've witnessed firsthand the "blessing" of a slab — sprinkling water on the surface and working it in — to close the surface or make the concrete more workable. While this may seem like your only option in saving a slab, think again. There are other options available.

### Evaporation retardants (good)

More than a generation ago, the industry developed evaporation retardants to eliminate using water during the finishing process. The result was better concrete, less cracking and scaling, and a reduction in the number of "tear outs."

The premise of evaporation retardants was simple — they extend the effective working time of the concrete while in its plastic state by slowing down the rate of evaporation of the bleed water at the surface. The chemistry is straightforward as well, nine parts of water to one-part proprietary chemical blend.

Per the written instructions of an



industry leader's evaporation retardant: Apply to concrete immediately after screeding. Apply with a low-pressure sprayer using constant pressure. Apply uniformly and cover the surface with a fine mist.

An evaporation retardant works by forming a monomolecular-single molecule film across the entire surface of the treated concrete. It is hydrophobic, meaning the water within the concrete is held in place until such time that the film evaporates and the bleed water breaks through the surface. This allows contractors additional time to complete the placement of the concrete before falling back to begin the finishing process.

Evaporation retardants are ideal for use in hot, dry or windy conditions where rapid moisture loss at the concrete surface wreaks havoc on placing and finishing concrete properly. It causes the concrete to crust over, crack or become unworkable.

Most manufacturers of evaporation retardants also state something to this effect: Do not work into surface. Or, evaporation retardant is not a finishing

aid. What does this last statement mean? It means that the evaporation retardant isn't meant to be used during the troweling process of the concrete. It shouldn't be "worked into" the concrete.

A generation or more ago this was not an issue. However, in today's need-it bigger, better and faster society in which we live, concrete is being placed in larger and larger pours without much thought given to proper placement and finishing. Thus, evaporation retardants are being misused, with results similar to that of using water. Instead of being used as intended or designed, they're being used as finishing aids.

Evaporation retardants are being troweled directly into the concrete. Once that monomolecular film is broken, it's the same as adding nine parts of water directly to the concrete slab. There's no difference and you have effectively changed the w/c ratio.

The result for the concrete finisher is immediate. The concrete becomes more workable. However, the result to the finished concrete can be very detrimental by creating a weakened surface, susceptible to cracking,

crazing, discoloration, flaking, scaling and dusting in the weeks and months to come.

### Colloidal silica finishing aids (best)

What's that saying: Necessity is the mother of invention?

Once again technology has evolved to the point where true finishing aids have been developed. There are now finishing aids available on the market that use colloidal silica technology. When used according to manufacturer's written instructions, these finishing aids can increase the window of finishing concrete in hot, dry or windy conditions.

Unlike evaporation retardants, colloidal silica finishing aids are meant to be worked directly into the concrete at any stage of the finishing process. Because the finishing aid is reactive, it chemically reacts with the lime found within the portland cement to create additional workable cementitious material, translating into a more abrasion-resistant and dense surface with improved performance. This results in higher compressive strengths,

doesn't alter the w/c ratio, and tightens the capillaries within the concrete which, in turn, reduces water vapor transmission.

This type of true finishing aid eliminates the need to add water to the surface which can be detrimental to the slab's surface performance. Further, it's excellent for use with shake-on floor hardeners in low bleed-water environments.

From the contractors' point of view, one of the biggest advantages of using colloidal silica finishing aids versus water or evaporation retardants is the fact that they can be used during the final troweling and finish application. Because they lubricate the surface, they help reduce operator fatigue and trowel wear while still providing all the benefits of a harder, abrasion-resistant and dense surface.

While water should never be used during the place-and-finish process, a case can be made for the proper use of evaporation retardants and an even stronger case for colloidal silica finishing aids. Evaporation retardants cost a few cents per square foot and,

when used correctly, provide a benefit.

Colloidal silica finishing aids cost a few more cents per square foot than an evaporation retardant and provide additional long-term benefits, as already discussed, in addition to increasing the window of finishability.

Why risk tearing out and replacing your concrete when you can use proven technologies and systems? The key is knowing what to use and how to properly use them.

The goal is to help our industry grow and evolve, using technologies and systems. By working smarter we don't always have to work harder. 🛠️

*Greg Iannone is area sales manager for Solomon Colors/Brickform. He has worked in the concrete construction industry for more than 30 years and has provided training seminars throughout the U.S. and Puerto Rico, as well as Mexico and Japan. He can be reached at (801) 376-6750, (909) 434-3274 or [giannone@solomoncolors.com](mailto:giannone@solomoncolors.com).*

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# Solid Branding:

## 4 Tips for More Effective Portfolio Images on Your Website

by Brandon Farmer

**L**OOKS aren't everything, but when it comes to decorative concrete, looks take the lion's share. Other factors are important, such as how the job was installed, the products that were used or how it will stand the test of time, but if a project isn't easy on the eyes you'll have very little success attracting any lions at all — as in, drumming up new business.

Your website functions similarly — looks are just about everything. People rely on a website's design as a top criterion for deciding if a company is or isn't credible. Having quality images on your site will drastically improve its overall design, helping people to trust your business — perhaps the biggest factor of all.

Here are four tips on how you can improve the portfolio images on your website, making them better selling tools for interested customers:

### 1) Present a dedicated portfolio.

Having a portfolio section on your website is crucial. From hamburgers to cars to homes, products sell more effectively with photos. People want to know what they're getting, and there's no surer way of knowing than seeing a photo of the real thing. You do beautiful installation work and it deserves to be seen. Attracting interested eyes will lead to sales.

### 2) Include only your best work.

If you already have a portfolio section on your website, you deserve a high-five, but are all the photos the best you can muster? In the design world, a creative portfolio should only display someone's best work, the projects that set them apart from the competition and make them a clear winner for the right audience. Are there any images on your website that might be dragging you down? Poor lighting? Pixelated or small images? Harsh reflections on the epoxy coating? Uninteresting angles?

You want to attract the right people,



Photo courtesy of Brandon Farmer

not detract them. By focusing on your best work, you'll help shepherd those potential clients through your portfolio versus leading them away with things they're not interested in or, worse, turn them off.

### 3) Think like the customer.

If you are hoping to buy a home, what would you like to see? A close-up of the wall? Or the living room as a whole? The tilework in the shower? Or a wide-angle of the entire bathroom? Too many decorative concrete installation photos showcase only the work, meaning a close-up of the surface, rather than the entire scene.

In a recent survey, 67 percent of consumers say the quality of product images is "very important" in selecting and purchasing a product. It's worth taking an extra five minutes to move that bucket, wait for the water to dry or frame several pictures to determine the best angle.

Don't just show the 4-square-foot close-up of the stampable overlay you just put down. Instead, highlight the entire patio and outdoor furniture, the driveway as well as the gorgeous home it leads up to, the garage floor plus the

beefy tools on the wall, or the living room and large windows lighting the new microtopping. Show the product to them in its full glory, and this includes its supporting cast.

The customer is motivated by the experience they are going to have, not the end-product. You want to imprint their minds with the best possible vision of what their experience will be. While it's important to highlight the star of the show, the customer longs to exist in the new space. So think like the customer.

### 4) Use high-resolution images.

Resolution is how crisp an image is and uses pixels as the unit of measurement. Essentially, the more pixels an image has, the higher the resolution. Images that are pixelated or distorted are caused when they are scaled larger than their intended size. If pixels were grains of sand, the finer the aggregate the better the resolution.

With technology moving faster and faster and today's screens getting larger and larger, it can be hard to keep up with higher resolution thresholds. That's why many decorative concrete portfolio images are pixelated or blurry.

The images were taken when the standard image resolution was far lower than the high-megapixel smartphone cameras of today.

If we're talking numbers, 1,920 x 1,080 pixels is a common resolution for screens today but don't let this number bind you as many exceed that with screen sizes continuing to grow. Aim for the highest resolution your device can produce. Posted images between 700-1,000 pixels in width or height is a good place to start and will prevent your images from being too small.

You can always size down with good results, but you can't enlarge a small image and retain the quality. Keep in mind, however, that the higher the resolution the longer it will take for the website to load, so avoid resolutions beyond 2,000 pixels if you don't need an image to fill the screen.

For more information on resolution, visit [www.WebsiteDimensions.com](http://www.WebsiteDimensions.com).

For tips on how to build a website, refer to "Solid Branding: Tips on Websites, Logos and Business Cards" in the January 2018 issue. 📱

*Brandon Farmer is founder and creative director at Pixter, a small company specializing in video, design and brand development. His resourceful philosophy and cost-effective approach has helped many decorative concrete companies and contractors strengthen their brand without breaking the bank. He can be reached at [brandon@pixtermedia.com](mailto:brandon@pixtermedia.com) or (801) 810-7085.*

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**1**

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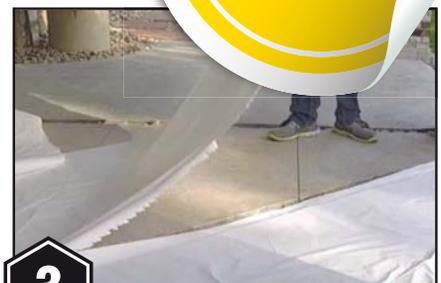
Roll the biodegradable Deco-Peel blanket over the acrylic sealer to be removed. Trim corners and curves to fit. (Easy in tight spaces, too!)



**2**

### Roll it on.

Roll or brush apply the biodegradable Deco-Peel liquid stripper over the blanket until saturated. Allow the liquid to dry (usually 2-4 hours).



**3**

### Peel it off.

Peel the blanket off, and that's it! Just throw the blanket away and you can apply a new sealer after 24 hours.

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Photos courtesy of Nox-Crete

One of the easiest ways to strip off old sealer from an existing patio is to use a fabric blanket coated with liquid stripper.

# Strippers, Sealers and Systems

## Stripping before resealing yields the best results

by Craig Coppersmith, P.E.

**A**NYTHING worth doing is worth doing right. Don't cut corners and expect quality results. These may sound like clichés designed to get folks to toe the line but more often than not, I've found them to be absolutely true. In the same way that you get what you pay for, you get out of something what you put into it.

For example, suppose a backyard concrete patio is ready for a facelift. The acrylic sealer applied years ago is worn out and the surface is blistered, chalky and cloudy. The impression it will leave on guests is not the impression wanted. So what's the remedy? Technically, you could just reapply a sealer and hope for the best. But if you want to do it right, you start by prepping the surface for a new sealer by stripping away the old sealer. The results you see on the surface are only as good as the foundation.

### Off with the old

There are several common approaches to removing acrylic sealer and none of them are easy. Each of

these options will work — eventually — but there are pros and cons to weigh.

**Hazardous solvents.** A solvent like xylene is effective at removing acrylic. It dissolves (“softens”) the acrylic and allows for removal. However, solvents such as xylene have a harsh smell, are flammable, dangerous for your skin, and shouldn't be used around children, pets and plants. Most importantly, these types of solvents are not EPA compliant for use in this way.

**Stripper + pressure washers.** A compliant floor coating stripper combined with a power washer can blast away old acrylic pretty effectively. This method works but typically requires significant “elbow grease” to soften the acrylic. The step of removing the softened acrylic by pressure washing requires significant prep work to protect landscaping, siding and other surfaces from splatter of the softened acrylic and over-spray of the stripper that could strip other surfaces. Pressure washing without the benefit of a stripper is generally not very effective.

**Sandblasting or grinding.** Aggressive techniques such as these may get the job done but it will often compromise the original surface and aesthetics of the concrete. It also is laborious, creates a mess and requires significant cleanup.

So, what's the best option for removing worn-out acrylic sealer, particularly in a confined space like a backyard patio? Biodegradable blanket stripper treatments are a great option in this type of situation.

### Blanket benefits

This stripper method is easy to use, safe and highly effective. Sweep the surface clean and remove all debris. Cover your affected surfaces with a specialized biodegradable cellulose blanket and apply a biodegradable stripper right over the top. Use a brush for edges and small spaces, and a 3/8-inch nap paint roller for the larger surface areas. Spread the solvent on evenly until the blanket is saturated. Let the blanket dry completely, then simply pull it up and throw it away.

# What sealer should you choose?

Acrylic sealers range in quality, price and effectiveness. They won't all produce the same results, so you'll want to consider the look and qualities important to you. Here are some tips for selecting a good, high-quality acrylic sealer:

- A methyl methacrylate-based acrylic is the highest quality acrylic available whether it's water- or solvent-based. It has superior performance characteristics and will maximize protection and enhance stamped concrete, exposed aggregate or natural stone patios. Methyl methacrylate-based acrylics extend the life between reapplications and make surfaces easier to clean.

- Choose an acrylic sealer that has good moisture vapor transmission properties to resist peeling and flaking.

- Consider what type of color vibrancy you want to achieve as this will affect whether you use a water-based or solvent-based acrylic. Solvent-based acrylics tend to provide a high-gloss, wet look while water-based options tend to provide a less glossy sheen. Some people feel water-based acrylics provide a more natural look. Flattening additives can be added to either solvent- or water-based acrylics to provide a more matte-looking finish.

- Acrylic sealers can be slippery when wet. Consider an anti-skid additive, commonly available from sealer manufacturers, to provide slip-resistance for surfaces when they are wet.

Follow the manufacturer's recommendations for application. One of the best pieces of advice for a sealer installation is "thin to win." It is always better to apply two thin coats versus one thick coat. When applied correctly, your sealer should prevent spalling and damage from weather extremes. It should protect surfaces from water, oil, grease and more.

Stripping and sealing outdoor concrete surfaces is the best way to make them look new again. When you take the time to do it right, the results will pay for themselves.

## Tips for optimal results:

- Make sure the surface is dry for 24-48 hours before using a blanket stripper.
- These biodegradable solvents work best between 50 and 85 degrees F.
- Application during low sun angles (morning or evening) requires less product and produces better results.
- Don't forget the valleys, joints and ridges. Keep rolling until the whole blanket becomes translucent and the concrete is visible through the fabric.
- Dry time of the biodegradable solvents is variable depending on weather conditions, but typical dry time is between two and six hours.
- Allow at least 24 hours after stripping before applying a coating or sealer.

Not only is this method easy, fast and effective, it's also environmentally friendly when you choose biodegradable materials. The stripped chemicals are absorbed into the blanket instead of the nearby soil. The blanket system may not remove multiple sealer coats in one application and may require additional applications for complete removal.

## On with the new

You've successfully removed the faded, delaminated sealer from your surface and you're ready to reseal. Acrylic sealers are easy to apply and economical. They create a thin protective film that gives concrete a wet look. Acrylic sealers are available in solvent- and water-based formulas. 🛠️

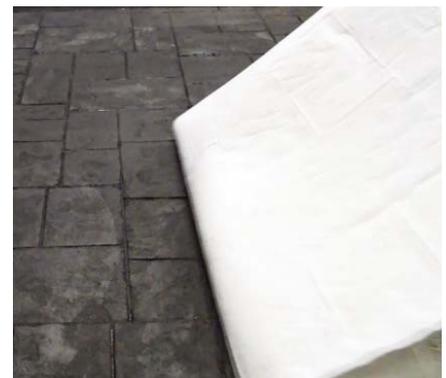
*Craig Coppersmith, vice president of technical sales and marketing at Nox-Crete Products Group in Omaha, Nebraska, is a licensed professional engineer with more than 25 years of experience in manufactured products for concrete construction. He is an active member of ACI and ASCC, and has presented at World of Concrete. Craig can be reached at [CCoppersmith@nox-crete.com](mailto:CCoppersmith@nox-crete.com).*



First, roll out the fabric blanket.



After the blanket is in place, apply the liquid stripper.



When the blanket is dry and impregnated with old acrylic sealer, peel it up.



Pressure wash the patio to remove the remaining chemically softened old acrylic sealer.

# ARTISAN IN CONCRETE



Photos courtesy of Greyrock Concrete Design

## Steve Gartner, Greyrock Concrete Design

Fort Collins, Colorado

by Vanessa Salvia

**G**REYROCK Concrete Design owner Steve Gartner has come a long way from when he got into the business “by accident” after fabricating and installing his own countertops. He’s now doing dozens of jobs within a few hours’ drive of his Fort Collins, Colorado, studio. His knowledge and talent have grown significantly, too.

“I started out by being a DIYer,” Gartner explains. “My wife and I were doing a kitchen remodel and ran out of money so we had to figure out how to do the countertops on our own.”

At the time, Gartner was a construction manager for a residential home builder. Someone had mentioned that countertop legend Fu-Tung Cheng had easy-to-follow instructions, and that countertops were easy. That person was right about one thing: Cheng’s book had good instructions. But installing concrete countertops is not exactly easy.

“We fumbled through that countertop book and made our own and they turned out pretty good,” says Gartner. “And I said I would never do it again!”

### Famous last words

And you can guess how the rest of that story goes. A couple of years later, in 2007, a residential developer wanted



concrete countertops, and although Gartner had only limited experience, it was more than anyone else had in the area. “They hired me to do countertops for them and that’s where it all started,” he recalls.

In 2007, the construction industry was taking a serious hit. Gartner, now 42, went to school for construction management and was seeing his educated colleagues drop out with no job prospects. “I thought if you can hold on to anything right now it’s a niche market and, if the

whole thing bounces back, at least with the countertops you’ve got a niche to go with,” he says.

When Steve and his wife, Inger Gartner, first started the company, he says they were “practically giving their services away” to friends and family to build up experience and a portfolio.

“There just was no market for it at the time,” he says. “After about a year we started charging appropriately for our services and we were able to get some local businesses on board by showing them what we had done.”

### Business grows

One of the Gartners’ first major projects was a white



concrete bar top for a local craft beer bar. The other connection they made was through real estate agents who were flipping houses. “We were trying to make anything out of concrete,” he says. “Sinks, countertops, whatever.” They’d say yes and then figure out how to do it.

“We had no guidelines or anything other than our construction background so if it didn’t work we just tried something else.”

In 2013 the company grew large enough to move into a 3,000-square-foot shop. At that point, they realized they

could do much larger projects than bar tops, including precast outdoor living items and large fireplace surrounds.

Where Gartner’s business is located, near the mountains of Colorado, people often want large hearths for fireplaces. Most times, his clients request a large hearth but don’t know what they want it to look like or what’s involved with installing one.

“People have a concept in mind and sometimes a drawing, but they don’t understand structurally how to make it float, or even what the possibilities are,” he says. “We have to figure out what to

do, how to produce it and then actually do it.”

### One for the books

Now that his skills have caught up with his creativity, “Every day is like Christmas,” Gartner says. “It’s super rewarding to have successes and really challenging to have failures. It makes you addicted, even to the stuff that comes out poorly because you’re immediately challenged to try and figure out how to do it.”

One of the most challenging jobs he’s done, and the one he’s most proud of,

# ARTISAN IN CONCRETE



involved a master bathroom shower for a high-end client in Jackson, Wyoming. “I don’t know if we’ll ever do a project that was harder than that,” Gartner says. “I almost still can’t believe we pulled it off.”

The job, which was chronicled in *Concrete Decor*’s October 2012 issue, involved a rounded, barrel-shaped shower that was panelized. One option would have been to spray and trowel

the concrete, but that’s not the look the client wanted.

Instead, not truly understanding how difficult it would be to make 30, 1 inch-thick GFRG panels, transport them eight hours away and install them, Gartner’s team built forms for curved panels that resembled skateboard ramps, using a 2-by-4 framework, Masonite substrate and a melamine casting surface.

Each mold was more than 8 feet tall and divided into three panels. They pulled it off “almost flawlessly,” he says, but he wouldn’t attempt a job like that again for less than three times what he charged at the time.

## The yes guys

Now, Gartner’s team is working on a project about four hours away from his shop in Snowmass, near Aspen,



to install large fireplace hearths in 30 condo units. The project is unique to Gartner because it's the first time the panels are so large that they must be installed before the doors and windows go in. The one-piece panels vary in length up to 18 feet long.

The architect specified each unit to have a different hearth. Gartner and the contractor are trying to work out a way to make more of the units the same, to

decrease the cost and the work involved on the project. "It's a lot of logistics and timing," he says.

Each year Greyrock Concrete Design's client base is growing, and Gartner feels he's assembled the best team he's had yet. "We've gone from two people to 10 and down again to figure out the right formula, and we have a good formula now," he says.

"Every year more people are learning

about us and when people come to me and say, 'This is what we're thinking. Can you do it?' most of the time the answer is yes. It's fun for people to come to us with an idea that we then design rather than just saying, 'We'll take that one.' Our confidence has always been there but now the ability to pull it off is there as well." 📱

🌐 [www.greyrockconcrete.com](http://www.greyrockconcrete.com)

# HEAD OF THE CLASS

## ICFs play big part in energy-efficient school's design

by Joe Maty

**C**ONSTRUCTION using insulated concrete forms (ICFs) doesn't instantly turn design and building projects "green" or "sustainable" all by themselves.

But as part of a system of energy-saving designs, ICF manufacturers and specifiers say the concrete-wall construction system can play a major role in achieving energy-efficiency objectives and reeling in LEED (Leadership in Environmental and Energy Design) credits. LEED is the U.S. Green Building Council's green-building rating system.

The experience of the Warren County, Kentucky, school district in the Bowling Green area makes a compelling case for those who champion ICF construction as an integral component in energy-efficient building design and

Images courtesy of Sherman Carter Bamhart Architects



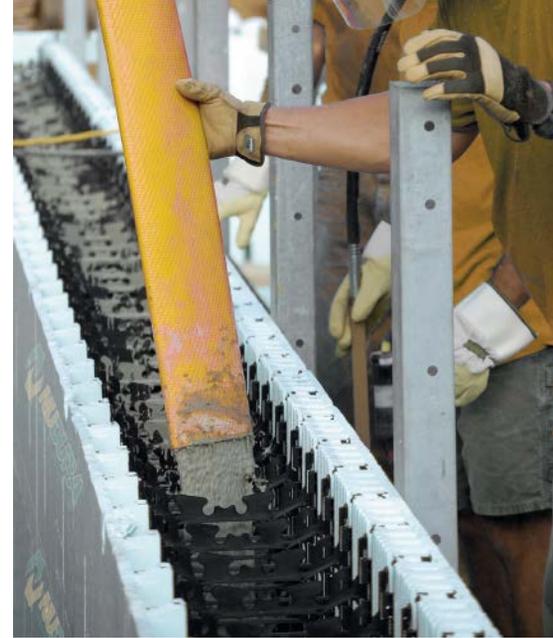
The average monthly utility bill for an elementary school in the U.S. is \$7,000. During one month that had eight sunny days, Richardsville generated enough solar energy to cover more than \$4,300 in utility charges. The school also received a \$300 credit for excess energy it generated and sold to the electric company.



Richardsville Elementary in Bowling Green, Kentucky, was the first net-zero energy school in the United States.

operation, going all the way to net-zero energy buildings and net-zero energy "ready" buildings. Net-zero ready means the building is nearly net-zero but needs a nudge — such as that provided by on-site solar-power generation — to reach net zero.

That's the scenario for several schools in the Warren County district. And one school — Richardsville Elementary — is indeed net zero thanks in part to a solar array that generates more electric power than what's needed for the building. The surplus goes into the electrical grid operated by the region's power utility, the Tennessee Valley Authority.



According to ICF manufacturers, insulated concrete form construction combines several wall-assembly components in one unit: Concrete, steel reinforcement, insulation, air barrier and vapor barrier.

ICF construction has been called “Legos for grownups” due to the interlocking, insulated form panels or units that connect to create a structural wall framework. Steel reinforcement is added and concrete is poured into the space between the forms during construction.

The completed wall is structurally robust with vapor and air barriers, and carries a high R-value, indicating a high degree of insulation performance, ICF manufacturers say.

### Testing the ICF waters

The Warren County Public Schools (WCPS) district first went the ICF construction route in 2005, with Alvaton Elementary School. Jay Wilson, energy manager of the district, was approached by Martin Clark, representing ICF manufacturer Nudura, and agreed to give it a look. Clark is Nudura’s director of business development, commercial market, for the U.S.

“We had looked at low-hanging fruit,” Wilson says — meaning the usual design strategies adopted in ratcheting up energy efficiency, such as geothermal HVAC, daylighting, LED lighting, occupancy sensors that turn off HVAC and lighting when a building space is not being used, solar-reflective roofs and other advanced building-envelope technologies.

Clark and the district’s facilities manager visited a private school built using ICFs, and Warren County district officials decided it was worth a try, designing ICF walls into the Alvaton school project.

Alvaton is one of several schools in the WCPS district designed and built to be net-zero ready. The others are the Bristow and Jody Richards elementary schools. The under-construction Jennings Creek Elementary School is slated to be Warren County’s — and Kentucky’s — next net-zero school when it opens next fall, Wilson says. ICF construction is part of the design for all the schools.

“We knew we were onto something,” school architect Kenny Stanfield says of the Alvaton project’s energy-savings performance and the role played by ICF construction. Going forward with other school designs, “We knew we would do ICF as part of the project.”

All that’s standing in the way of going from net-zero ready to actual net zero in the schools, says Stanfield, is the addition of sizeable solar-energy installations. Solar economics — and politics — hold the key to whether the net-zero objective will be achieved, and when. Financial inducements for solar-power arrays fluctuate, depending on which direction the winds blow in Washington and the statehouses and how those politics figure in utility company renewable-energy incentive programs.



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Images courtesy of Sherman Carter Barnhart Architects

South Warren Middle and High School is the largest ICF school in the nation. It also operates at/or below 25 EUI, so it's considered net-zero ready.

Wilson, who also wears the hat of WCPS director of safety, says ICF construction's resistance to winds of up to 250 mph figures prominently in buildings in tornado-prone regions such as Kentucky.

**Crunching a few numbers**

Richardsville Elementary, the Warren County school district's net-zero facility, achieved that lofty status with an energy-use reading of 18.9 EUI (Energy Use Intensity), well under the 25 EUI reading needed for net-zero operation when sufficient solar-energy generation is added. By comparison, Stanfield says school buildings in U.S. climate zone 4 average around 73 EUI.

The other schools in the Warren County district defined as net-zero ready are listed here with year of completion.

- Alvaton Elementary, 2006
- Bristow Elementary, 2010
- Jody Richards Elementary, 2012
- South Warren Middle and High, 2012
- Jennings Creek Elementary, fall 2018 (net zero)

ICF construction won't magically transform a building to net-zero energy use all by itself, says Stanfield, a principal with Sherman Carter Barnhart Architects in charge of the firm's K-12 Education Studio. But, he says, ICFs in combination with other design innovations are a proven way to get a building design into the net-zero neighborhood.

**The thermal-mass effect**

"You can reach the numbers" that ICFs deliver by employing other wall designs, "but adding insulation is only part of the equation," Stanfield says. A key contribution from ICFs is attributable to the concrete wall itself — the thermal-mass effect.

The concrete wall's thermal mass absorbs heat energy during the daytime, Stanfield explains, storing up the energy



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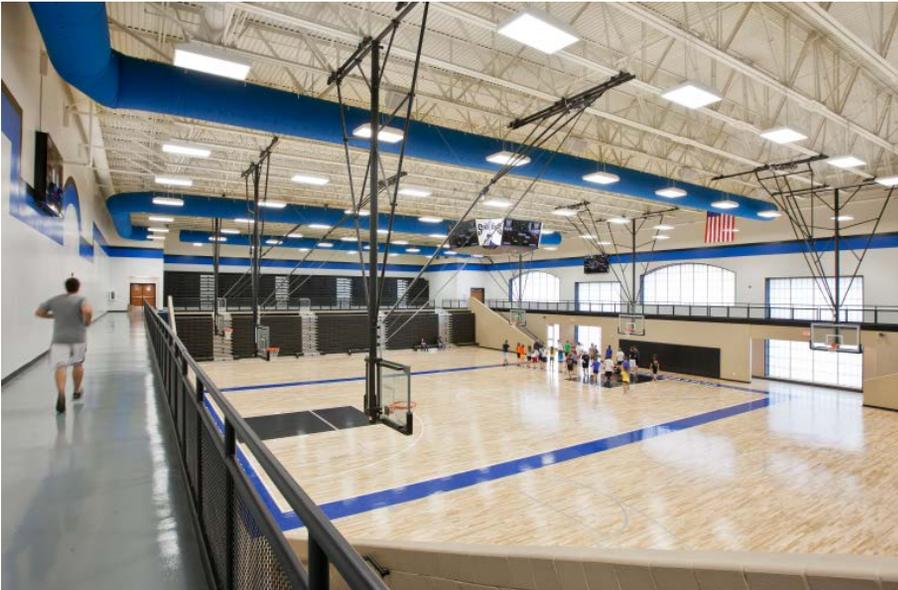
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Completed in 2012, South Warren Middle and High School boasts annual energy savings of more than \$682,000. ICF construction was used for interior and exterior walls.

from daylight, lighting systems, occupants and HVAC systems. At night, this heat energy is slowly released, easing the demand on the HVAC.

The high-R-value foam insulation in ICF wall construction acts to slow this absorption of heat energy by the thermal mass of the concrete, and subsequent transfer of heat energy from this thermal mass to the building interior, Stanfield says, a conclusion that Nudura representatives confirm. But at the same time, the air-barrier effect of the ICF wall assembly works to block the entry of colder outside air.

Combined, the thermal mass and high-R-value insulation work to sharply reduce heat-energy transfer into the building in warmer weather as well as the transfer of chill into the building in colder weather. The thermal-mass effect functions as part of this insulating barrier.

In regions with wide swings in temperatures from day to night, the thermal mass effect can be an important factor in energy performance, he says.

Another passive solar-energy strategy, Stanfield says, is the building's orientation, where its longest wall face is on its south side to maximize storage of daytime energy in the thermal mass of the ICF wall.

Sherman Carter Barnhart gives ICF construction high marks as a single building system that delivers multiple functions: load-bearing walls, insulation,

thermal mass, air barrier, sound insulation and severe-storm resistance.

"There's no other product that can give that kind of wall performance," Stanfield says, referring to other building-envelope systems.

#### ICF and the net zero-ready template

Stanfield's firm is in the vanguard of energy-efficient school design, with credits that include WCPS's Richardsville, Jody Richards (EUI: 20.0), Bristow (EUI: 23.6), and South Warren Middle and High (EUI: 24.3). Four other schools designed by the firm in other districts also boast EUI scores under 25.

South Warren Middle and High School, the state's largest public school when completed in 2012, boasts annual energy savings of more than \$682,000. It features a host of energy-efficient and sustainable innovations, from geothermal heating and cooling to a solar-reflective roof. ICF construction was used for interior and exterior walls.

Sherman Carter Barnhart's designs in other districts are modeled on the WCPS template for net zero-ready design, Stanfield says.

Wilson, WCPS energy manager, says the insulation factor of ICF construction is significant. "I think all of our buildings going forward will be ICF, until we find something better." 

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# Modelia Days Gokokuji

## Apartment Building Emphasizes ‘Square Frame as a Whole’

Tokyo, Japan

by Stacey Enesey Klemenc

**S**ITUATED in the Otowa district of Tokyo’s Bunkyo ward, the Modelia Days apartment building is very close to the Gokokuji temple, which was established in the Edo era (1603-1868) as a place of prayer for members of the shogunate, a feudal regime of Japan. Although the neighborhood is situated in the city center, it retains traces of those bygone days.

As is common for Tokyo, the apartments are small in size, ranging from about 250 square feet (20 square meters) to about 461 square feet (43 square meters). With 11 in all units, the apartment building is about 3,905 square feet (363 square meters). The only common areas are the entrance hall and the staircase.

The building is predominantly made with naturally colored gray concrete placed bottom to top on site.



Photos by Bauhaus Neo

Its most striking feature is the window treatment. From inside, the windows appear sufficiently large, but on the outside the surface surrounding each one slopes in at an angle, creating a recessed “frame.” Some of the sloped surfaces are covered with hot-dipped galvanized steel sheets.

On the inside, some of the windows have a wooden frame-like shelf that echoes the rectangular shape of the recessed frames, creating a loose connection between interior and exterior. The architects say they wanted to emphasize the “square frame as a whole.”

The square-framed windows also enhance the inhabitants’ privacy. To avoid direct lines of sight between the apartment building and the residents of the single-family homes lining the other side of the narrow road on which it sits, the windows are shifted slightly off-center. The window arrangement also brings breezes and natural light into the building.

The units’ interiors have a very simplistic style and are composed entirely of white walls and unadorned concrete with all unnecessary elements eliminated. This minimalist design, which seeks the simplest possible form

for an apartment building, is intended to link to a lifestyle unburdened by superfluous material possessions.

The architects say they envision the minimal elements of the apartment enabling a freer lifestyle for its residents. For example, the storage space enclosed by freestanding walls



### Project at a Glance

**Project name:** Modelia Days Gokokuji

**Architects:** Ryuichi Sasaki/Sasaki Architecture + Rieko Okumura/Atelier O  
[www.sasaki-architecture.com](http://www.sasaki-architecture.com)  
[www.atelier-0.com](http://www.atelier-0.com)

**Design team:** Ryuichi Sasaki, Rieko Okumura, Gen Sakaguchi, Anna Kwapien, Marion Foulet

**Producer:** Hidetaka Gonai/Modelia Co. Ltd.

**Light design:** Natsuha Kameoka/Lighting Sou

**Contractor:** Magome Construction Co.

**Building management:** Alpha Management & Partners Co. Ltd.

**Client:** Nobumitsu Ohashi/Shuko Kensetsu Co. Ltd.

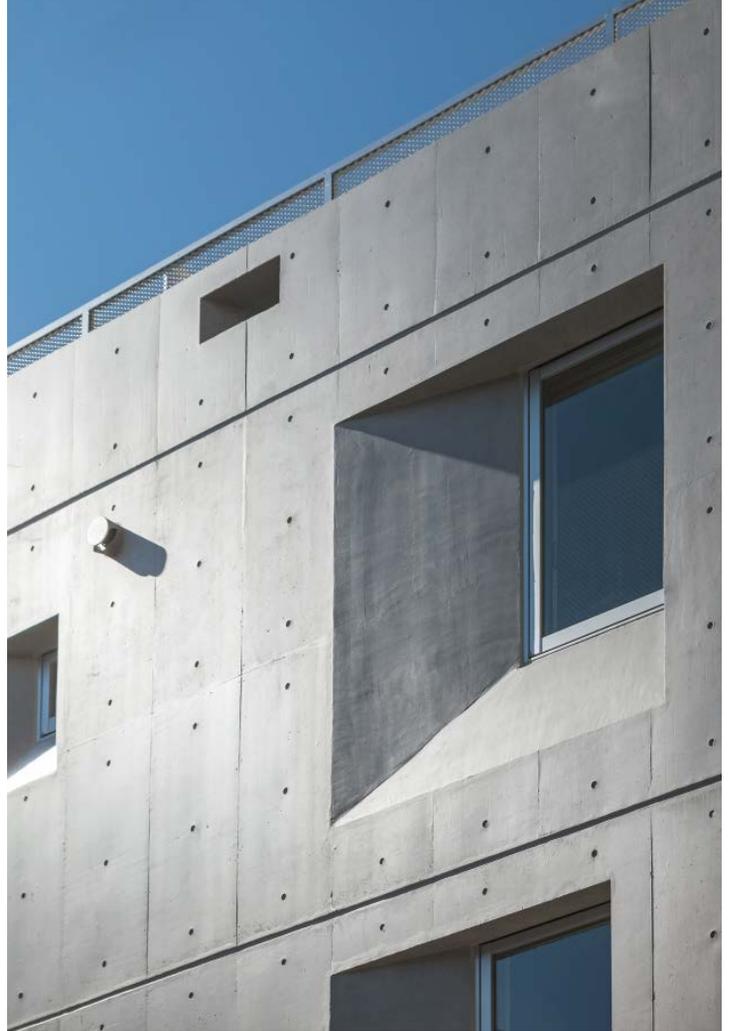
**Location:** 2-9-7 Otowa, Bunkyo-ku, Tokyo, Japan

**Total Floor Area:** 3,905 square feet (362.79 square meters)

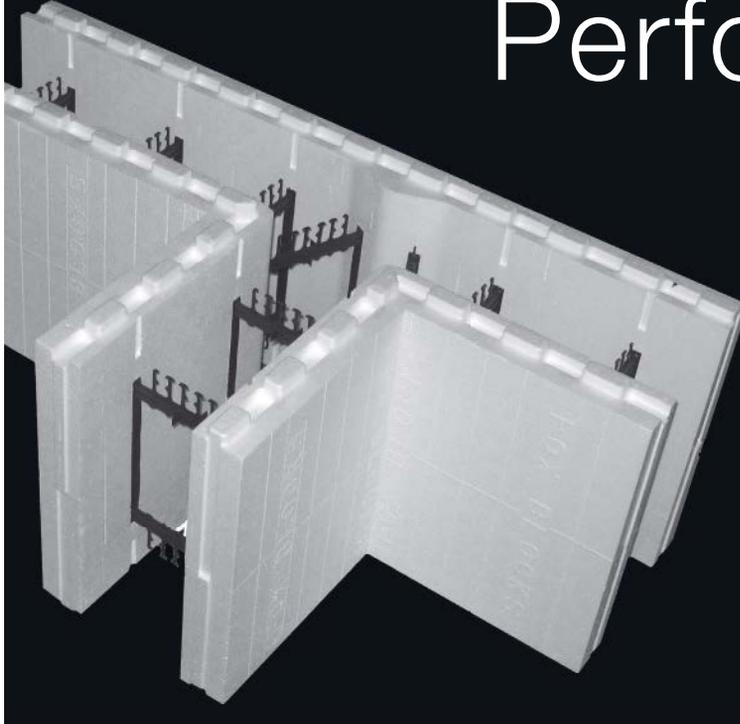
can also become a compact office, while the spacious concrete kitchen counter can serve as a desk.

The windows and wooden frame-like shelves in this building make abundant use of squares. "Once we have freed ourselves from convention of modern design that dictates either a horizontal or a vertical window," the architects say, "squares may be the purest and most primitive shape for these openings."

They say the most challenging aspect of this project was to conceive a residential building that would become a piece of art in its urban surroundings. 🖌️



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# Photo Finish: Contractor finds cure for vintage-car studio's coatings headache

by Joe Maty

**A**UDIENCES in France loved the comedy of Jerry Lewis in his Hollywood heyday.

Go figure.

So, should it be a baffling head-scratcher to learn about a billionaire Italian jewelry and luxury goods magnate being smitten with vintage Buicks?

The magnate in question is Nicola Bulgari, grandson of the founder of the legendary Bulgari brand of Italy and vice chairman of the jewelry, luxury-goods, fragrances and hotel/resort concern.

Bulgari is big on old Buicks — and a variety of other iconic American

automobiles. So much so that he developed a sprawling, 21-acre warehouse complex in Allentown, Pennsylvania, where some 150 fully restored cars are housed in seven buildings.

The collection ranges from the relatively mundane (a Plymouth minivan, for example) to the rare and noteworthy, such as the taxicab from the beloved American movie “It’s a Wonderful Life” and a 1940 Buick Estate Wagon (a “woodie”) once owned by Hollywood legend Bette Davis.

But even the less-than-memorable vehicles at the complex boast some

kind of significance, such as being the first model year of groundbreaking models — the Plymouth Voyager mentioned above, for example, was not just representative of the minivan phenomenon. It was the first minivan from Chrysler Corp., driven off the assembly line by CEO and company turnaround strategist Lee Iacocca. The rest is history, as they say, as the minivan supplanted the station wagon as the go-to vehicle for American families on the road.

Bulgari’s vintage car collection, now part of the NB Center for American



Photos courtesy of the Historic Vehicle Association

## Project at a Glance

**Project:** Concrete floor of photo studio operated by Historic Vehicle Association, Allentown, Pennsylvania

**Owner:** NB Center for American Automotive Heritage

**Coatings contractor:** Surface System Installation, Allentown, Pennsylvania, [www.paintingbyshane.com](http://www.paintingbyshane.com)

**Coatings supplier:** Coatings for Industry Inc., Souderton, Pennsylvania, [www.cficoatings.com](http://www.cficoatings.com)

**Key materials:** Wearcoat 100 polyester aliphatic urethane coating and topcoat; Sherwin-Williams ProMar 200 interior wall paint

**Scope of project:** Application of polyester aliphatic urethane high-performance coating to concrete floor of photo studio, following extensive testing and evaluation of coating material for brightness, resistance to abrasion, tire marking and staining, and gloss level

**Key challenges:** Custom formulation of coating material to achieve low-gloss level in combination with high-level of resistance properties; skilled application of coatings and containment of work area to prevent contamination of surfaces by airborne dust or debris



Automotive Heritage, is impressive indeed. Just as amazing is the Allentown facility's restoration program, staffed by mechanics and other experts specializing in auto exteriors and interiors. The collection, you see, not only glitters and gleams. The cars are road-worthy — in running condition and subject to regular workouts on the Allentown complex's track.

But one corner of the Allentown complex was causing a case of heartburn, a situation that called for the expert attention of a local epoxy flooring and coatings contractor, Shane Smoyer of Surface System Installation.

The problem was a photo studio where facility managers struggled to find a concrete coating solution that delivered a bright, white backdrop for photography, but with a matte finish that could withstand a range of chemical and hydrocarbon substances. It had to stand up to tire marks and abrasion, and scrub back up to picture-perfect condition between photo sessions. The finish also needed to mitigate shadows and reflection.

Why all the fuss about a matte finish plus durable, stain-resistant performance?

It's because a group called the Historic Vehicle Association (HVA) operates the photo space as part of a program to document significant American automobiles for the Library of Congress. And the Library of Congress is just a little particular about these things, says Casey Maxon, HVA historian.

Smoyer took the wheel of this mission to find the optimal coating solution, enlisting the coatings expertise of a trusted supplier.

### Tricky target: Light on the gloss, tough on stain resistance

By his own reckoning, Smoyer and his company had earned a reputation for problem solving in difficult coating challenges. In this case, he didn't find fault with the epoxy coating that had been applied to the photo space.

"It looked good, generally, and was performing reasonably well," he says. Like many coating formulations, there was a trade-off: Compared to a higher-gloss finish, a matte or flat

finish typically comes with a reduction in resistance to chemicals, abrasion, hydrocarbons and other staining agents.

Smoyer turned to Coatings for Industry Inc., a developer and manufacturer of high-performance coatings headquartered in Souderton, Pennsylvania. Smoyer had used CFI's Wearcoat 100 polyurethane, with success, in demanding service conditions such as food-processing facilities and other industrial settings.

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# PROJECT PROFILE



Photo courtesy of Shane Smoyer/Surface System Installation



Photo courtesy of The Historic Vehicle Association

automotive-related application,” Smoyer says of the product. It’s high in abrasion resistance, including wheel-traffic service; highly stain resistant to a range of chemicals, oils and fuel; UV stable and not prone to discolor.

But the coating formulation — a polyester aliphatic polyurethane — was available only in a satin or high-gloss finish. Smoyer asked if CFI could “flatten” the finish in a custom batch. CFI tinkered with the gloss and produced a batch for testing and evaluation.

## Put to the test

CFI’s polyurethane coating, Wearcoat 100, was put through the rigors of endurance testing on the photo studio’s concrete floor. The polyurethane coating was applied to one section of a testing area and the polyurethane-plus-clearcoat finish was applied to another section, Smoyer says. Then, gasoline, oil and other agents were poured on the surface. A tire skid was added to test resistance to rubber skid marks. An old car from the collection was parked over the area because, as one participant in the evaluation process noted, “old cars always leak” oil and other fluids.

The coating passed adhesion and staining tests, as well as a tire-marking test, with staining and burnishing removed with lacquer thinner and a wipe of a cloth, Smoyer says.

The coating job was relatively straightforward: Smoyer’s crew spray-applied a conventional flat white paint (Sherwin-Williams’ ProMar 200, a high-reflective white) to the studio’s walls.

The concrete floor was in good physical shape, so it got a going-over

with a cleaner/degreaser and a floor sander. After vacuuming, a microfiber cloth misted with water was used to pick up any stray dirt or dust particles. The polyurethane coating was applied by roller — one coat — with a clear polyurethane topcoat applied two days later. The surface was kept off limits to foot or vehicle traffic for a week to allow full cure.

CFI’s Wearcoat 100 is a two-component, polyester aliphatic urethane for high-performance applications in demanding industrial and commercial environments. Typical uses include chemical process facilities, aircraft hangars, water and waste-treatment plants, and auto dealerships.

“It’s performed really well,” says HVA’s Maxon of the coating work by Surface System Installation.

## Ready for their closeups

Maxon sought to explain the importance of the flat white coating for the studio. The HVA, he says, is in the early stages of a project with the Library of Congress to document and photograph noteworthy examples of American vehicles produced since the dawn of the automotive age.

The Library of Congress sets stringent specs of its own for photography, insisting images be captured on film rather than digitally. “Photoshopping” or other retouching is verboten. The HVA, as a result, needed a flawlessly white photo-studio setting, and one that would stay that way.

Some photo studios for vehicles, Maxon noted, are repainted frequently. But this wasn’t a practical option with the HVA, staffed by just two people in

Allentown — Maxon and colleague Preston Rose — and limited by budget constraints.

“We knew it was an issue from the start,” Maxon says of the white-paint conundrum. An epoxy coating was initially used when the studio opened some two years ago, but the contractor struggled to get the gloss right. Fluids and oils weren’t an issue, as they scrubbed off, but tire marks threw a wrench into the works. “They would not scrub off,” he says.

## Picture perfect paint

For the HVA, solving the photo-studio coating dilemma removes one roadblock to its mission of documenting noteworthy American motorcars — vehicles such as the first presidential limo (powered by steam, incidentally), the first Chevrolet Camaro off the assembly line, the Plymouth minivan mentioned earlier, the Ferrari replica used in the movie thriller “Bullitt,” the 1938 Maserati that won two early Indianapolis 500 races, and other rare and curious entries from the American love affair with the auto.

“Our mission is to share America’s auto heritage with the American people, to make sure people 50 to 100 years from now will appreciate and understand the cultural importance of the auto,” Maxon says.

With a little help from a white coating from CFI and a resourceful painting contractor, the HVA is in the driver’s seat to immortalize the American automobile experience — in tune with the Library of Congress’s precise photographic manual. 📷

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\* To obtain this look, a stain was also applied.



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# Microtopping Surface Discoloration

## What are those white spots on the floor?

by Chris Sullivan

**T**HESE questions came from a couple who were building a new home and wanted polished concrete floors. The main floor is slab on grade, while the second level is slab on an engineered raised subfloor. There were issues during the concrete finishing, which eliminated polishing as an option.

Subsequently, the general contractor and homeowners agreed on a light gray microtopping that would be applied over both the main and second floor to provide a smooth and uniform colored floor in place of polish. The microtopping was applied, and within 24 hours it started to turn white and blotchy. The homeowners did some research and reached out for assistance.

### Question 1

Their first question was, “Can efflorescence happen on top of a microtopping the day after it’s put on a slab on a second floor? There’s no sign of efflorescence anywhere on the slab before the microtopping was put on. This is an indoor floor and a new slab.”

The short answer is yes. Anything that contains cement or lime has the potential to develop efflorescence. Efflorescence is caused by moisture migrating through the slab bringing soluble salts to the surface of the concrete. The soluble salts react with the atmosphere and become insoluble. This is why efflorescence can’t be cleaned with plain water.

### Question 2

Their second question was, “Is efflorescence always powdery as it’s a salt? Our white spots look like the acrylic polymer they use while installing the microtopping came to the top! It only happens in some areas and not throughout the floor. They are not ‘powdery.’”

The answer here is also yes, but with a caveat. Efflorescence can present in many forms and colors. It’s not always white. In fact, depending on the type



Photo courtesy of Chris Sullivan

Within 24 hours after this microtopping was applied, it started to turn white and blotchy.

of salts, it can be green or have a slight bluish-gray tint. It can also be a fine powder to a large crystalline growth and everything in between.

Efflorescence is, however, always “powdery” in some way or another. In this case the white spots are not powdery, which I think rules out efflorescence.

### Question 3

They actually answered the third question, which was, “The sub now wants to seal the microtopping to ‘blend in’ the white spots. We think it’s a bad idea.”

As I have preached for years, when in doubt, don’t seal! Once a sealer is applied the number of options to repair or change a decorative floor are significantly reduced.

If a sealer is applied, many times it needs to be removed, which is miserable work. Also, it’s not often a sealer will “blend” anything. In most cases the sealer has the opposite effect, enhancing or magnifying the issue. If a sealer is going to be applied as a repair or fix, always test in an inconspicuous place to make sure the result is acceptable.

### White spots worsen

Lastly, they point out, after multiple microtopping applications, the problem is only getting worse. “Would you know what happened from the pictures? We have had them recoat several times and these white spots get worse each time! Any suggestions?”

We’ve already ruled out efflorescence because the spots aren’t powdery. We can also rule out issues caused by the concrete slab because after multiple applications of microtopping, discoloration caused by the slab should be reduced and, in this case, they claim it is getting worse. The pictures they sent showed that.

It is widely known that adding extra water to concrete while finishing increases the water-to-cement ratio at the surface, affecting the strength as well as diluting the color. This same theory holds true for microtoppings — and all cement-based toppings for that matter.

The argument can be made that because toppings are mixed in small quantities, small changes in water content while mixing or during installation will have a larger effect on the final product. From the

pictures, and having seen this issue before, I suspected that there was an inconsistency in how the microtopping was being applied, which was creating the random discoloration.

### Hunch is correct

The owners' comments in question two, "Our white spots look like the acrylic polymer they use while installing the microtopping came to the top!" was spot on.

In a more in-depth discussion, the owners said the installers were randomly spraying the microtopping with a diluted liquid polymer as they troweled. The installers did this to aid in finishing and to help provide a smooth surface. What they unknowingly were doing was randomly diluting the microtopping, as well as creating a high concentration of polymer, creating the discoloration and probably affecting the strength of the product as well.

The solution is pretty straightforward. Apply the microtopping without adding any liquid while troweling. If the microtopping doesn't finish to the desired degree of smoothness, the installers need to add extra water while mixing not installing. The other choice is to select a different product that will provide the desired finish.

The critical thing is to stay consistent — use the same amount of water, mix the same way, apply the same way and cure the same way. Consult the technical guidelines before adding any chemicals to make sure they don't affect the final performance. You can use plasticizers or set retarders with some products to help how the product finishes.

### Consumers today do their homework

As an interesting side note, this situation brings to light that the consumer has become much more educated and savvy. When you read the questions, it's obvious the owners had done research, especially when you consider they aren't in the concrete industry.

We can thank the internet for that. The amount of information available for those willing to spend a few minutes researching is staggering. As someone who uses the internet to

reach thousands, I view this as a good thing — as long as the information is accurate and beneficial. When the consumer is educated, it serves to raise the bar for all involved.

As an industry, we should be on notice that the days of poor communication and lack of knowledge are over. The clients we deal with are all more knowledgeable and can research almost every product and system on the market. That means it is

our responsibility to be better prepared because, in the end, the client is expecting us to be the experts. 

*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](mailto:questions@concretedecor.net).*

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# Cutting Edge

Choosing  
the best blade  
for the job

by K. Schipper

**D**IAMONDS may be forever in jewelry and James Bond movies, but when it comes to the workaday world, not so much.

If they were, a good diamond saw blade could be passed on from father to son. As it is, blades can be a regularly occurring purchase whether you're doing surface engraving or cutting control joints.

And, while one option is to simply choose the blade that's cheapest, professionals know the quality of their cuts defines them. A little knowledge and research can mean better cuts and a better reputation.

## Close to forever

They may not last forever, but diamond blades have one big advantage over the competition.

"They don't wear as fast in diameter as some other abrasive blades," says Darrel Adamson, owner of Engrave-A-Crete in Mansfield, Missouri. "Diamonds are an abrasive blade, but they last longer than, say, a carborundum blade."

(Carborundum, a trade name for the artificial crystal silicon carbide, is not as hard as an industrial diamond.)

Although there is more than one way to manufacture diamond blades, the most popular is what's referred to as an eroding segment diamond blade, according to Dave Glynn, vice president of U.S. Saws in Tampa, Florida.

"They take a certain amount of manmade industrial diamonds and mix it with a matrix of metal powder than can be made from several different things, including copper, tin or nickel," Glynn explains. "They

Vacuum ovens are used to provide the high temperatures required to fuse the diamond grit to the underlying metal on vacuum-brazed blades.

Photo courtesy of U.S. Saws

Photo courtesy of Engrave-A-Crete



Concrete engraving requires a blade that operates at low horsepower because the goal is to carefully wear away the surface of the concrete rather than make a deep cut.

take the matrix and the diamonds, heat it up and put it under a tremendous amount of pressure so it forms a segment.”

Once a segment is formed, it is then welded to a blade core. Another method called electroplated or vacuum-brazed may also be used.

It's also important to realize that diamond blades don't really cut.

“They grind the material through the action of friction surrounding the diamonds and matrix,” says Bruce Coleman, a product manager with Multiquip in Carson, California. “This process eventually cracks or fractures the diamond particle, breaking it down into smaller pieces. As the diamond particles break down, the metal bond matrix also begins to wear.”

The bottom line is that larger particles of soft, abrasive materials wear down a matrix faster than the small particles removed from hard, dense materials. In both cases, however, it's important to have a diamond-and-matrix mix that will continue to erode at a good rate to expose the diamonds embedded in the matrix.

### Know your job

There are several different conditions of concrete that need to be considered in choosing the best blade. Topping the list is whether the job will be done on green or cured concrete.

Bryan Jones, a product manager with Husqvarna in Olathe, Kansas, says blades for cutting green concrete typically have a harder bond because green concrete is much more abrasive than cured concrete.

Photo courtesy of Husqvarna Construction Products



Making large, deep cuts for something such as highway expansion joints requires a blade that can cut many linear feet at high speed.

“When the concrete is green, and the blade is cutting through it, the sand can move around without being ground away,” Jones says. “That makes it much more abrasive on the blade than cured concrete, where you're moving the sand out, rather than moving it across the face of a diamond segment.”

Still another consideration is whether you're cutting wet or dry. While dry cutting is losing some popularity due to the increasing strictness of the federal Occupational Safety and Health Administration's regulations on silica dust, dry cutting does continue at some job sites.

There are blades that are made specifically for dry cutting, says Jones. “You can wet-cut with just about any

diamond blade out there, but you can only dry cut with a limited number of them,” he says. “And, that's usually with smaller-diameter blades and lower-horsepower saws.”

Multiquip's Coleman adds that not only does wet cutting mitigate dust, but it also provides positive cooling protection to the steel core of the blade.

A saw's horsepower also has an impact. For instance, Engrave-A-Crete's Adamson notes that concrete engraving is typically done with lower-horsepower saws because while the goal is to wear away concrete near the surface, deep cutting isn't required.

“Horsepower is a big issue in blade selection,” says U.S. Saw's Glynn. “You also need to know how deep you're

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going to be cutting and how fast your saw is turning. There's a certain rpm (revolutions-per-minute) limit to every sized blade."

### Weighing the options

As with so many other purchases, when shopping for diamond blades, it first helps if you can define what you want that blade to do or, more specifically, its purpose.

"Are you going to be doing something decorative or cutting expansion joints into concrete," asks Rick Lobdell of Concrete Mystique in Nashville, Tennessee. "You need to know what size blade you need to fit your saw, what depth you're going to be cutting and what width."

Sadly, a visual inspection of blades

at a tradeshow isn't going to provide all the answers. It's an area where seeing isn't necessarily believing, although Adamson says it won't necessarily hurt.

"If you know a couple of things about the blades you can probably look at the surface and see the size of a segment and the depth of the segment," he says. "You can look at the edge of the blade and see if it looks like there's any sort of diamond concentration, and you can look at the color."

Lobdell believes a keen observer can see differences between blades, although seeing the differences in the number of diamonds present probably isn't possible.

"You will notice a size difference," Lobdell says. "And, when you go to test them, you'll feel there's something

different about the different segments."

Because the blades are so important to the product if you're sawing concrete, the best decisions are based on research, research and more research. Fortunately, both the internet and the blade manufacturers themselves are happy to provide information.

"They're looking to make sales, so they're very thorough in trying to understand what you're looking for," says Lobdell. "A lot of them will send you a blade to test out to see if you like it. Get to know your sales reps and talk to them."

Finding someone near your location is particularly helpful because they're going to have experience with the sand and the aggregate in the concrete found in your area.

## Saw by the code

by K. Schipper

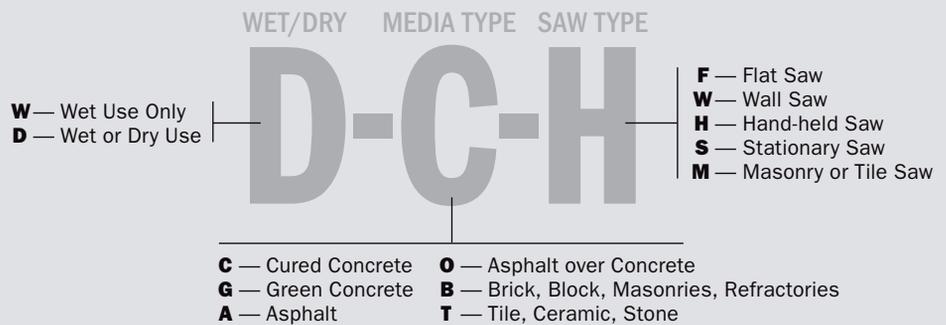
If you're new to sawing concrete, or if your business only requires you to do the work occasionally, you might want to acquaint yourself with the Blade Application Code for Diamond Saw Blades from the Concrete Sawing and Drilling Association based in St. Petersburg, Florida.

Patrick O'Brien, CSDA's executive director, says the code, which is posted on its website, is to help people match the right saw blade to a job.

"It makes such a huge difference to be able to use the right saw blade," O'Brien says. "If you have a blade for green concrete and you're using it to cut cured concrete, it's just not going to work very well. It's the same if you have a wet blade and you're trying to cut dry."

The code identifies blades by three separate specifications. The first letter indicates whether it's designed for a wet or dry application. The second is to show the material it will cut: cured concrete, green concrete, asphalt, brick block or tile.

"The third letter identifies what type of saw it's for: flat saw, wall saw or masonry saw," he says. "The goal is for somebody to be able to look at the blade and be able to figure out whether



To help contractors determine which saw blade is right for a job, the Concrete Sawing and Drilling Association has devised a classification system that applies to diamond saw blades 12 inches in diameter or larger. The code, which consists of letters placed in three positions divided by dashes (i.e., X-X-X) will be permanently imprinted on each blade.

it is or isn't going to work for them."

O'Brien adds that almost all the blade manufacturers who are CSDA members got together on developing the code, which pulls together previously available information that they supply to those who inquire. The advantage to the code is that it gathers the information in one place.

He sees it as being particularly useful for the contractor who occasionally needs to cut 20 feet of concrete and goes to a rental house to get a saw for the day.

"They give them a blade, or they may have to buy a blade, but they don't know what to buy," O'Brien

If a blade is capable of multiple applications, it will be marked with more than one letter in the associated position. For example, the CSDA notes, a blade with a code W-GAB-F is a wet blade that can cut green concrete, asphalt, brick, block, masonries and refractories and is intended for use on a flat saw.

Source: Concrete Sawing & Drilling Association

says. "Then, the guy may be out there forever because it's just not cutting because the bond is too hard or too soft, or it's for the wrong application."

Those in the industry agree that at this point not enough people know about the Concrete Blade Codes — but they should.

"Especially if you're going to a distributor and purchasing a blade. They might not have as much information on the blade as the manufacturer does," says Bryan Jones of Olathe, Kansas-based Husqvarna. "With the codes, you can at least look at each blade, and know exactly what it's supposed to be cutting."

Additionally, U.S. Saws' Glynn says by talking to the company from whom you bought the saw, it's going to have a good idea of what will work best with its machine.

"We've done a lot of testing with different blades and different surfaces, so we have a lot of experience," Glynn says. "Not only that, but by talking to customers on a day-to-day basis, we have a lot of their experiences, as well."

Don't hesitate to do your own testing. Husqvarna's Jones recommends starting out with your manufacturer's recommended blade, but don't be afraid to branch out from there.

"Do your own experiments," he says. "If you're a professional cutter, you're going to go through a lot of diamond blades per year. Run side-by-side comparisons and keep track of your footages. That way you'll know what's the best blade for your piece of equipment."

Engrave-A-Crete's Adamson agrees. "Don't just log the manufacturer and the blade design, but log what was

in the concrete," Adamson says. "Did it have large aggregate or small, did it have mesh in it or rebar? And, track how many inch-feet (linear feet times the depth in inches) you cut."

It's also important to remember that the total value of a diamond blade purchase is not measured by cost alone. Multiquip's Coleman notes that most manufacturers offer the same size blade in different grades — often economical, standard, premium, supreme and professional — to provide options to best fit with the tool's value as defined by speed-of-cut and operational life.

"Generally, and depending on the diamond tool being used, the higher-grade blades tend to provide higher degrees of cutting efficiency and tool life," he says.

Adamson puts it slightly differently. "The right blade is a balance between labor and the cost of the diamonds," he says. "If you choose a blade that's cheap but takes forever to cut something, it slows you down, costs more in

Recognizing the correct-size blade for your saw is only part of the job. Cost versus performance is much harder to determine.

Photo courtesy of Multiquip



labor and even gasoline if you're running a gas saw. It's a false economy and a lost opportunity." 

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# Concrete: Guaranteed to Crack

by David Stephenson

**W**HEN I first got into the concrete business, a very revered contractor shared some sage advice. He said, “David, there are only three things you can guarantee a customer when you’re working with concrete. No. 1: Concrete will always get hard. No. 2: No matter what you do, concrete will crack. And No. 3: Concrete will never get stolen.”

Almost 20 years and thousands of projects later, these three rules still apply. Concrete cracks whether you want it to or not. Engineers spend their entire lives dedicated to trying to get concrete slabs and walls to crack where they want. Every set of specifications you look at and every set of architectural plans you see have pages dedicated to concrete cracking.

For this article, my goal is to help you better understand cracking when it comes to concrete. I hope to help you prepare your customers for potential issues by shedding some light on how to handle these issues when they happen.

## Shrinkage cracking

There are basically three types of everyday cracking. The first, and most common, is shrinkage cracking. When concrete is placed, it is a liquid. You must keep it a liquid to get it to form into the shape you want. With the right water-to-cement ratio, you can get a liquid that flows. This makes it easier to push out of a truck or pump to an intended spot.



Unfilled shrinkage crack

The amount of water added is tightly controlled. There is a constant battle between the supplier that has promised the concrete will get to a certain strength or hardness, and the placement contractor whose job it is to get the wet gray material out to the middle of a slab and get it flat.

The supplier wants it drier because that helps achieve strength and the placement contractor wants that mud wetter because it makes it much easier to get it into place.

The key point to understand in relation to cracking is that water is a certain percentage of the concrete mix. Any material that contains water will shrink as it dries and the water evaporates. Concrete is no different. A typical 4-inch slab will shrink at least ¼ inch for every 100 square feet of surface space.

*Any material that contains water will shrink as it dries.*

This shrinkage causes several issues. The two main ones are cracking and curling. In this article, we’ll only focus on cracking. As the shrinkage begins, the concrete will crack where it is the weakest. Cracking typically starts within 12 hours of the finishing process, but it can be slowed or accelerated by weather conditions. Shrinkage cracking is typically planned for and handled with control joints.

Control joints are designed cuts that go at least half way through the thickness of the concrete slab. These are intended to cause weakness so that the concrete cracks along the bottom of the control joint which releases the stress from the evaporating moisture. These joints are typically spaced evenly through a project.

I typically see control joint placement across the slab with the cuts forming squares that are 10-by-10 or 15-by-15-foot wide. If the spacing between these control joints is larger, even if the concrete follows the control joint pattern, you end up with extremely wide joints that become harder to fill and maintain. Over time with traffic, the edges of wide joints break easier, creating safety issues. Larger sections also have a greater chance to crack in unintended locations.

## Structural cracking

The second most common type of cracking is called structural cracking. Although I’ve seen it many times in new buildings, structural cracking doesn’t typically occur there. It tends to be more prevalent in older structures.



Structural cracking

The pressure of a building is controlled by the weight of the structure and the wind. Over time structures settle and outside influences, like broken pipes or hurricanes, cause pressure to build up in certain points throughout the structure.

One of the first places these stresses are relieved is in the concrete. Here the one thing that makes concrete valuable, its strength, is its greatest weakness. Because the concrete cannot flex, it must crack. These cracks show up in a variety of widths and directions. I often see elevation variances where one side of the crack is higher than the other. Structural cracks can become tripping hazards when the height variance becomes too high or the crack spreads too wide.

These cracks can be repaired several ways. In my specifications, I recommend repairing them based on the facility’s usage. If a crack is ¼ inch wide and in an industrial environment where heavy forklift or vehicle

Photos courtesy of David Stephenson

traffic will be going over the crack, I recommend chasing the crack with a wider blade and filling the crack with a high-strength repair material. This keeps the smaller cracks along the edge of the larger crack from spreading.



Crack chased and filled

This method works well, but often highlights the cracking. When we find a ¼ inch wide crack in a retail environment where light cart traffic and foot traffic are typical, I ask the contractor to clean the crack and inject filler (color matched to the surrounding concrete) into the space without chasing the crack. This method

typically stops the crack from getting larger or spreading in the light traffic environment, without calling attention to the crack.



On all the programs Stephenson manages, “filled not chased” is the preferred method of handling cracks.

### Craze cracking

The third most common type of cracking, and the one that seems to frustrate customers the most, is called “craze cracking.” Often referred to as “alligator skin cracking” or “map cracking,” it’s purely aesthetic. It only affects the surface skin of the concrete without creating any structural issues.

This type of cracking typically covers a large area and has very fine veins in the surface. It is caused by the concrete’s

skin drying faster than the inside of the slab and trapped moisture underneath causes it to flex. This usually occurs when dry, hot or windy conditions occur while a slab is being placed.



Craze cracking

I often use an analogy of the crust on bread when explaining this to customers. The outside cooks faster than the inside and then cracks when the inside expands. You can easily see these

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cracks if you slightly push an uncut loaf of bread together from the ends.

Because it covers a larger area, and because it is so visible, customers tend to be most frustrated about craze cracking. Typically, the cracks will appear white against the darker gray of the troweled slab finish.

I recently had a high-end clothing store customer get extremely frustrated because another subcontractor opened a back door and left it open after the concrete was poured into an area. The wind rushing through the open door caused cracking on the back 25 percent of the store. This was a polished concrete project, so these cracks were extremely visible. To fix this, we attempted to grind slightly deeper and grout the area. This was partially successful but some of the cracking remains.

Years ago, I stumbled on a technique that has helped many times with craze cracking issues. Customers tend to find light or white-colored cracks more upsetting than dark ones. I figured out if I used a water-based dye (slower penetration than acetone-based dyes)



“Antiqued” craze cracking

and sprayed the area with the cracks, I could let the color sit for about 60 seconds and then shop vac the area.

The only thing that took the color, due to the short dwell time, was the cracks. The smooth concrete didn't have time for the water-based dye to penetrate. This process basically “antiqued” the cracks so they were darker and became a feature rather than a frustration. The hard part is when retailers started asking how they

could intentionally cause this cracking because they liked the antiqued look.

## There's no disappearing act

There's an enormous amount of research that's been conducted on the causes of all three types of cracking discussed here. If you go to the websites of the American Concrete Institute or the American Society of Concrete Contractors, you'll find a lot of very useful information.

If you're a decorative concrete contractor, always remember you didn't do anything to cause the cracks. They are a natural part of concrete curing and getting hard. There are very good repair options to keep cracks from getting worse, but no good method for making them go away.

By preparing your customer ahead of time with potential repair options, you can head off a lot of frustration and headaches. Remember, concrete — just like any other stone — gets hard and cracks. Those points are intertwined. 🗡️

*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.*



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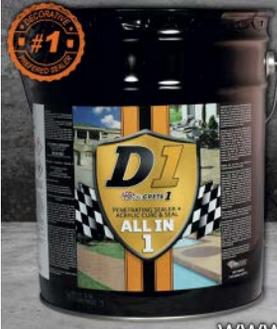
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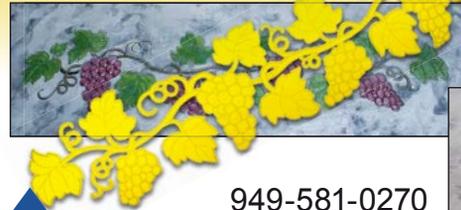
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# Basketball Central

by Stacey Enesey Klemenc

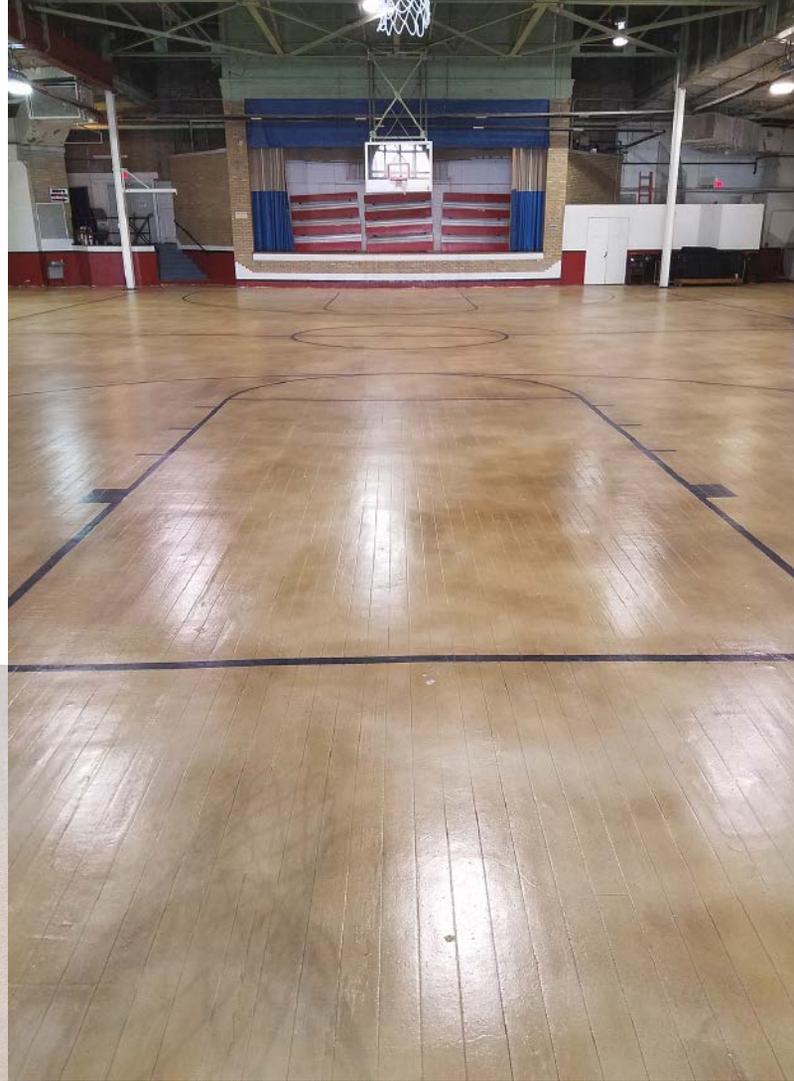
**A**LITTLE-KNOWN fact about New Castle, Indiana, (for everyone not a Hoosier) is that it's home to the world's largest high school gymnasium. Basketball fever is so rampant in this small town of 18,000 that the community raised the money needed to build a high school gym that seats 9,325 spectators. Before the ginormous gym opened in 1959, games were played at the circa 1925 Church Street Gym, which accommodated a measly 1,800.

And that's what this story is about.

"Before they moved to the fieldhouse, the high school used this gym and there were some pretty big games played there," says Jon Bell, of JBC (as in Jon Bell Concrete). Some of you may remember Bell from the 2015 Brawl in the Fall competition in Indianapolis where his entry, themed after the movie "Hoosiers," featured concrete basketballs and a concrete court.

So it was quite a swoosh in his hoop when Bell landed the contract to resurface the 10,000-square-foot floor of the old gym, which had been acquired by the town from the YMCA and was now the Henry Township Community Center.

Although the facility wasn't going to be used for basketball games anymore, New Castle — which is also home to the Indiana Basketball Hall of Fame and the Steve Alford All-American Inn — wanted to retain its ambiance. It went with the territory.



The gym's original wood floor had been replaced with a carpet court, which Bell and his crew pulled up to reveal a precast concrete base. After filling in all the cracks, they put down a scratch coat of Stone Edge Surfaces' Pro Bond before applying Pro Spray, "which gave us a wood grain look," Bell says.

"We scored the lines first — 6½ miles of them, I added them up — with a carbide cutting tool. It took us four-and-a-half 10-hour days," he says. "It was not fun at all."

But the painstaking task produced fine joint lines, "like you'd expect to see on a basketball court," Bell says. Scoring the lines created a much more realistic hardwood look than taping the floor with ¼ inch tape or saw cutting it, he adds.

The floor was then colored with Sand Colour Dye from Surface Koatings, which appears darker where the floor is scored. Bell and his crew taped off areas and applied a black polyaspartic from SurfKoat to form the free-throw and out-of-bound lanes. The entire floor was then covered with SurfKoat's 100 percent clear epoxy and top-coated with a high-wear urethane from RCS Contractor Supply.

It took his crew four weeks to finish the biggest overlay job they'd ever done. "Every time we walked in," Bell says, "there was 10,000 square feet of something to do." 🛠️

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Photos courtesy of JBC



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