

## Living and Working with Stone: Maine Artist Mark Herrington

IT is not that often that I get to travel to my home state, Maine, for a story. This trip I had the pleasure of getting acquainted with Mark Herrington, a talented stone carver who has worked with stone to produce everything from countertops, to furniture, to sculpture.

While making my way through the towns of Ellsworth and Sullivan to Herrington's shop and showroom in Franklin, Maine, it was obvious that this pristine area has a long history of stone quarries. Mark's shop sits adjacent to an old quarry as well as a picturesque pond fed by a small waterfall – an idyllic spot to contemplate the next sculpture, fish for trout, or simply take a break from the daily grind.

Every nook and cranny of Herrington's showroom is filled with original art, thoughtfully placed. From his collection of tools and machines, Mark and his

**Peter J. Marcucci**

*Photos Courtesy  
Mark Herrington and  
Peter Marcucci*

rustic studio have gone through many changes, throughout the past 20 years. This is his story.

### *The Metamorphic Years*

"I Grew up in Orono, Maine, and in 1979, at the age of eighteen and right out of school I started building guitars," recalled Mark. "At the time, I just wanted to build things, and later on got a job in Boston making harpsichords. I did that for a while until 1980, when I mostly bounced around in the Portland, Maine area doing cabinet work, gaining skills and staying poor. Then, in 1982, my dad called me and my brother on the phone saying, 'Come on, let's build a camp,' and five years later we've got this huge house. It



was all part of his diabolical plan, and we now called it home and moved in with him in Gouldsboro, Maine."

By the late 1980s, Mark wound up building houses on Mount Desert Island. They were big custom mansions for millionaires with lots of woodwork. He ran the woodshop and built cabinets, and that's where he met Jeff Gammelin, the owner of Freshwater Stone in Orland, Maine.

"Jeff was putting stone countertops on the cabinets I built, and we would talk about them and work together on designing the next countertops. Jeff also said that if I ever wanted to work in the stone business, to come and see him for a job."

As time passed, Mark bought the property to build his current

**Above: Herrington built his studio with large barn doors to accommodate his larger sculptures.**

**Right: Herrington's Recurrent Journey dates from the 2009 Scodic Symposium, now placed in the Franklin Granite Park, Franklin, Maine.**

the quarry was opened in 1889 to produce cobbles for Haverhill, Massachusetts.

"As I was finishing up with the last piece of plywood for the roof and getting ready to set up my shop to do woodworking, I was looking out over the quarry thinking, I'd rather be working with granite than wood. So I went over to Freshwater Stone and asked Jeff if he still wanted to give me a job, and he hired me. I had never worked a piece of stone until I worked there, but I knew how to measure from doing cabinets, and started selling window sills and framing. I worked there for four years until 1993, and then wound up coming back here and opening up my own little stone countertop shop. I did my own templating and did cutting with a hand saw, while part-time guys would help me polish and install. It was great, but it wore me out. At the time, I wasn't selling that many countertops to walk-in customers. It was mostly to kitchen and bath shops where I put in displays."

*[Please turn to page 8](#)*

## Braxton-Bragg Named Preferred Partner of FLEX for Stone Industry

**B**raxton-Bragg has been named Certified Preferred Partner of FLEX Tools for the stone industry.

This partnership will allow for some unique cross-functional promotions. FLEX is the German company that invented the first high-speed angle grinder in the world in 1954, now known as "The Original," as well as being the first to implement water into an electric tool for stone grinding and polishing.

"FLEX's reputation of creating quality, innovative handheld tools for the stone industry, is a perfect fit for our customers and company philosophy," said Braxton-Bragg CEO Rick Stimac. "In business since 1922, FLEX is still making quality products on their original factory floor in Germany, but also innovating at the industry grows. The two companies share a vision for creating and adapting to the current and future market, to give our customers what they need to do their jobs well."

*[Please turn to page 4](#)*



# Flex Tools: Origins of a Stone Industry Influencer

FLEX has been manufacturing specialty tools for the stone and masonry trades for over 80 years.

All archive photos courtesy FLEX and Chervon Group



Hermann Ackermann



Hermann Schmitt

The FLEX story starts in Stuttgart, Germany, in 1922. The first product produced by Hermann Ackermann and Hermann Schmitt was a portable grinding machine powered by an electric motor and featuring a flexible shaft: the MS 6, the first serial-produced, hand-held grinding machine. This flexible-shaft feature was the inspiration and origin of the new brand's name: FLEX.

Today, the Flex family of products includes wet and dry grinders, wet and dry polishers, wet edge milling machines, wet handheld and stationary core drills, angle grinders, dustless concrete grinders, concrete wall slotters and a pneumatic wet stone grinder.

Braxton-Bragg has recommended FLEX tools to stone fabricators for 25 years, beginning with the first Braxton-Bragg catalog published in 1994, and introduced to the stone industry in early issues of the *Slippery Rock Gazette* (see 1998 issue ad, below).

Natural stone has its own rules, peculiarities and sensitiveness.



"Das Original," the original FLEX right-angle grinder, 1954 model, and 1996 Braxton-Bragg catalog page.



This is something known all too well to stone fabricators, stone masons, stone sculptors, and hardscape professionals.

In the shop or on the job site, FLEX tools have been the go-to solutions for fabricators for decades, including the FLEX LW-1503 Center Water Feed Grinder.

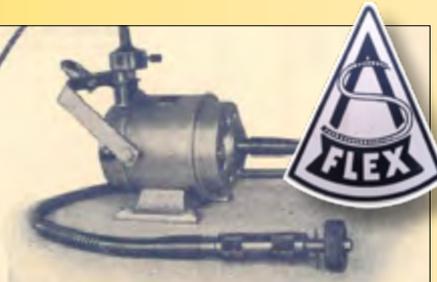


Present-day motor testing and grinder assembly at the FLEX factory: all tools must pass the strictest standards for quality.



From the first high-speed angle grinder in 1954, to today's advanced 5-inch grinders with long-life motors and brushes, and the longest service life in the industry, FLEX continues to lead in developing better tool technology for

the stone industry. "Quality tools for specialists," is their motto. After 87 years of development—they really mean it.



Early flex-shaft grinder and the original FLEX logo, used from 1923 to 1930.

From that humble beginning, FLEX is now an industry leader in wet and dry tools for concrete, stone, masonry and metals. For over 80 years, Flex has been committed to developing products that provide the stone industry with longer tool life and improved performance.

In 1954, the FLEX DL 9 was launched on the market — the world's first high-speed angle grinder.



Circa 1930 catalog— Left: FLEX Impact drill; Right: one of the first center water feed grinding tools.



1998 *Slippery Rock Gazette* page features several new FLEX products developed for the stone industry.





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### Braxton-Bragg is the Preferred Emmedue Supplier in the USA

Braxton-Bragg has been named the preferred national supplier for Emmedue Marble & Granite Machinery, and is one of only two suppliers in the United States. Emmedue is one of the premier brands of Industrie Montanari Company, manufacturer of stone-working machines since the early 1990s. Its product range includes Bench Saws for contractors, and CNC Bridge Saws and Work Centers for small, mid-sized and large stone fabrication companies.



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## Braxton-Bragg Named Preferred Partner of FLEX

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“Braxton-Bragg has exemplary customer service, and this partnership is a great opportunity to elevate ourselves in the stone business,” said Andrew Pompei, Regional Sales Manager—Central, FLEX. “The communications they have in place translates to FLEX selling more through Braxton-Bragg, their outside sales and mobile website, the *Slippery Rock Gazette*, and being deeply entrenched in the stone industry. FLEX has been around almost 100 years, but this partnership helps us both reach current and future stone fabricators.”

“As an innovative company, we recognize Braxton-Bragg as a leader in delivering high quality products and service to the market,” said Chris Metcalf, FLEX Sales Manager.

He continued, “Our R&D teams are dedicated to the industries they serve. We are always innovating, but most FLEX products are evolved from, and built upon the LW1503 water polisher. As we launch new products, we optimize them for

today’s market with variable speeds, soft starts, and improved ways to deliver water to the cutting area, knock dust down and cool the diamonds. This partnership has just caught lightning in a bottle, and we are about to disrupt the market in a powerful way.”

“Both companies echo the same mentality, believe in the other team, and have confidence in this partnership to the fullest,” added Stimac. “Our shared knowledge of the industry’s past, as well as our willingness to ride the future wave, makes for a winning combination.”

For 25 years Braxton-Bragg’s philosophy has been to offer exceptional products and first-class service to its partners in the stone, tile and concrete industries. For more info, visit [braxton-bragg.com](http://braxton-bragg.com) and [facebook.com/braxtonbraggllc](http://facebook.com/braxtonbraggllc).



“Das Original” is the c. 1954 FLEX grinder which modern modern stone grinders are modeled after.

### About FLEX

FLEX heavy-duty power tools provide the industry’s most complete line of wet and dry products for all types of natural stone, concrete, asphalt, brick and cinder block. The electric power tools feature unique FLEX electronics for optimum user control and productivity. FLEX started in Stuttgart, Germany, in 1922, by creating a portable grinding machine with a flexible shaft. For nearly 100 years, they have been committed to developing products that provide the industry with longer tool life and improved performance. “Quality tools for specialists.” For more information, visit [flexnorthamerica.com](http://flexnorthamerica.com).

## Stone Fabricators Gather at LPI for Digital Templating Open House

LPI hosted an open house at its headquarters for fabricators attending the Stone Fabricators Alliance (SFA) workshop at Sambor Stone in South Holland, Illinois.

Approximately 30 fabricators participated in a variety of training sessions with the LT-2D3D Laser Templator, including horizontal and vertical applications such as counters, full height backsplashes, showers and fireplaces. Attendees were able to get both one-on-one time with LPI team members, as well as meet and network with industry vendors and other peers.

“Our open house was a rousing success,” said Dan Peter, LPI marketing manager. “It is always important to maintain positive relationships with existing customers, just as it is critical to establish rapport with new customers. We

greatly enjoyed spending the afternoon with everybody and look forward to hosting similar events in the future.”

Following the open house, LPI had an active presence at the SFA workshop at Sambor Stone, which had a record number of registrations.

“We are proud SFA sponsors and always enjoy attending their workshops,” said Peter. “With this workshop being so close to our headquarters, it gave us an

opportunity to further engage with fabricators on digital templating heading into the extremely fun and interactive SFA workshop.”

Celebrating its 25th anniversary, LPI develops laser measuring equipment and technology solutions for various industries, including countertop, cabinet, glass and construction. LPI has sold over 6,000 lasers to more than 3,000 companies in over 35 countries. LPI products are made in the USA with some imported components, and used by both the world’s leading automated fabricators, as well as smaller, manual shops.



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“When the eagles are silent, the parrots begin to jabber.”

— *Winston Churchill*

## TRAINING & EDUCATION

### Do Engineered Countertops Stain?

The websites and social media pages of major quartz brands are full of bold statements: their products are “completely maintenance free” or offer “care-free maintenance.” Dig deeper and you’ll find detailed advice on stain removal and warnings to avoid strong cleaners and abrasives of any kind.

One well-known brand of engineered quartz advises: “All you need to do is wipe it down with a little warm water and mild soap.” This sounds appealing, but warrants a closer look to see how these products hold up to both staining and cleaning. Regardless of what type of surface one uses, upkeep will be a part of life with any surface—although if someone does invent a self-cleaning countertop, please do let me know!

This article is the second in a series exploring the properties of manufactured quartz products. Just as our geology series shares information on the properties of natural stone like granite, marble, and quartzite, it is also important to shed light on synthetic products that seek to imitate natural stone. Many people are curious about the differences between natural stone and

**Karin Kirk**

*usenaturalstone.com*

*Photos and Charts by Karin Kirk,  
Natural Stone Institute*

manufactured surfaces, and my approach is always the same: be wary of marketing claims, learn as much as you can, understand the properties, and be informed.

#### The Setup

It’s true that engineered quartz products are resistant to staining. However, they are not immune to staining, and in most cases, when they do stain, it presents a dilemma. Mild cleaners are insufficient to remove tough stains, and harsher cleaners or scrubbing pads have the potential to damage the surface. To sort out the details, I did several rounds of testing with various staining agents, cleaners, sponges, and scrubbers.

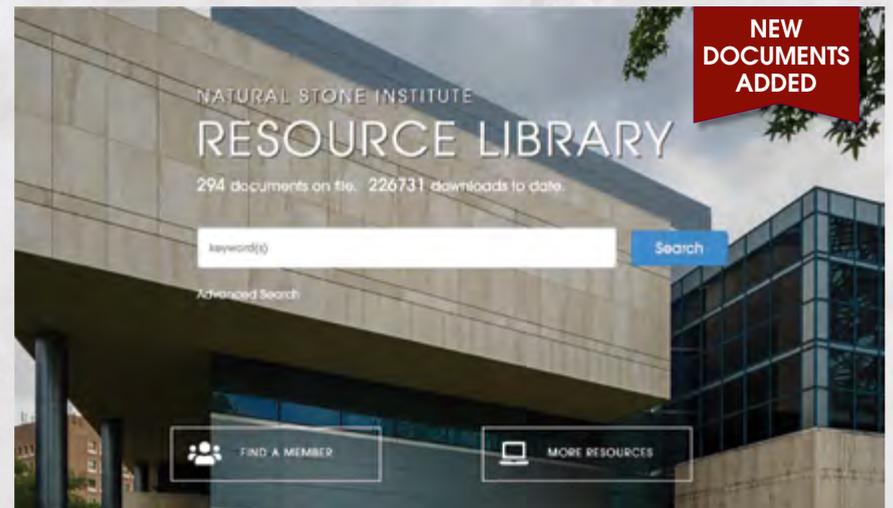
I tested five major brands: Caesarstone, Cambria, PentalQuartz, Silestone Nebula, and Viatera.

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**My test included five brands of quartz and hundreds of tests of staining, cleaning, and scrubbing.**



## ONLINE RESOURCE LIBRARY



### Find Answers to Questions About Natural Stone

Access quick answers to common questions about all varieties of natural stone, including suggested uses and applications for both residential and commercial settings.

[www.naturalstoneinstitute.org/resourcelibrary](http://www.naturalstoneinstitute.org/resourcelibrary)

## Braxton-Bragg Sponsors Summer Fun for Special Needs Adults at Helping Hands Camp

Braxton-Bragg continues its pledge of 25 good deeds for 25 years in business, sending a camper to Helping Hands Camp through First Baptist Concord in Knoxville, Tennessee.

The Helping Hands program is taking 16 adults with special needs, and seven caregivers for a fun-filled week away at camp, through generous donations. The camp provides respite for the parents and families for the week.

“For the young adult attending, it is an opportunity to do things that they are often told they cannot do,” said Helping Hands Ministry Coordinator, Mrs. Diane Knudsen. “With the help of many volunteers,



**Camp Helping Hands participants and caregivers prepare to embark on a fun-filled week of challenges and growth.**

camp activities are possible for all, regardless of their abilities. It is everyone’s favorite week of the year.”

“Sending someone to Helping Hands Camp is a small way that we can help them have a great week of fun, and accomplishment,”

said Braxton-Bragg CEO Rick Stimac. “We are honored to be a part of this program, and make a difference for a camper.”

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## TRAINING & EDUCATION

# Waste is a Waste... of Time, Effort and Money

*Don't Leave Profits Lying on the Shop Floor*

**W**aste is defined as to consume, spend or employ uselessly without adequate return. To use to no profit or opportunity. To squander.

In all businesses, waste comes in many forms. We often think of wasted materials like caulk, razor blades, adhesive tips, sanding pads, etc. on the shop floor. In fact, the list is very long.

In the fabrication business, labor and materials are the two highest items of expense. Depending on the company and its use of automated equipment, labor should amount to about 30% to 35% of sales. Combined labor and overhead, which we call Operating Expense, should be less than 50% of sales. Materials, including inbound freight, should be less than 35% of sales. Obviously, you would want to assure that every penny you spend on those items would be used effectively with minimal waste.

### Material Utilization

For material utilization, the objective is to increase yield (which is the opposite of waste). Making the best use of materials begins with programming to “nest” the parts as tightly as possible to minimize waste. Recuts can be a huge item of waste as you utilize more material than planned due to some mistake or faulty material. Every piece of material that goes into the dumpster is costing you just as much as the parts you cut for the products you make.

An excellent opportunity to increase yield is the effective use of remnants, which takes a bit of effort. Remnants can accumulate to the point that you just don't have room for more, so you clean them out (and start accumulating yet again). A simple approach is the “half slab rule.” If a cut job results in a half-slab remnant or larger, it goes into inventory with value at the cost you originally paid.

**Ed Hill**

*Synchronous Solutions*

**“It is better to produce inefficiently that which you do need than to produce efficiently that which you do not need.”**

Obviously, a remnant with value would be a priority for use if it will color-match. Material handlers should be encouraged and held accountable for using those remnants. Remnant of less than half-slab size, but large enough to be used for a vanity, should go back into inventory without value. They are the second priority for use. Remnants not large enough for a vanity, should be discarded. In any case, at least once a quarter, you should review the remnant inventory and decide what needs to be retained and what needs to be discarded. When you wait until you run out of room, you make the task more difficult and you are likely to discard something that could be of value.

As noted, this is a simple approach and seems to work well. There are more sophisticated methods that can be more effective if you choose to commit to the administration. Another point to consider is that there is a difference between a Purchasing Agent and a Materials Manager. The former is nothing but a buyer. A

Materials Manager is a much bigger job and is normally responsible for purchasing and inventory control.

### Labor Utilization

After material costs, the next largest expenditure for a fabricator is labor. With the increased use of automated equipment, the pure labor cost can be reduced but the waste can become even more dramatic because you may not be effectively using the investment in that expensive equipment. Wasted labor and equipment utilization can come in many forms:

- **Over production.** Producing more at some process step that is already ahead of schedule is not an effective operational technique. This leads to **excessive inventory**, which often needs to be moved to get to the needed inventory, which adds to labor costs and makes it more likely to be damaged. Excessive inventory is expensive. Investment in idle materials is not making you any money. It is not always good to be ahead of schedule. In fact, it is better to produce inefficiently that which you do need than to produce efficiently that which you do not need. Moreover, the labor capacity utilized to produce excessive inventory is still needed to produce the required inventory. This is classic waste.

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## SaMoTer 2020: Entries Now Open for 23rd Innovation Awards

**S**aMoTer, the international exhibition dedicated to construction machinery, will once again promote technological evolution and research during the run-up to next edition scheduled at the Verona Exhibition Center March 21-25, 2020. The closing date for entries in the 23rd Innovation Award is October 28, 2019. The event now boasts more categories to ensure even better representativeness of the sector, as well as the debut by a day of appointments with the trade press and a focus on design.

Construction companies, official representatives or importers, research institutions and bodies, universities and professionals active in the world of construction and building site machinery may all take part.

There are ten competition sections: hydraulic excavators, wheel loaders, track-laying bulldozers, skid-loaders, backhoe loaders, graders, telehandlers, attachments, software applications and installations.

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production optimization, elimination of ergonomic or operator safety problems and sustainability in the construction and use of machines. Not to mention applied design that, as of this edition of the SaMoTer Award, will see the assignment of a special prize.

“The earth moving machinery sector,” said Radis, “is evolving towards even more digitization and we therefore envisage that this aspect will also play a central role in the proposals entered for the competition. The by-now very near future of this market will be focus on process control and vehicle efficiency, including remote control thanks to 5G networks or, in particular situations, work in full autonomy exploiting artificial intelligence.”



**The self-loading mobile mixer (DB X35 BIG BAG) by Fiori Group Spa was awarded the Innovation Award in 2017.**

© Foto Veronafiore-ENNEVI

The award rules require that machines, equipment or prototypes are genuine innovations or improvements in the company production ranges and that they will make their absolute debut on the Italian market in 2020.

The jury, chaired for the first time by technical journalist Costantino Radis, will assess innovative investments such as solutions for energy efficiency,

The winners of the competition will later be the main features of the “B2Press” initiative, which includes an awards ceremony in Verona, Italy on the evening of January 23, 2020. On January 24, the winners will have “speed date” meetings with journalists from the international trade press to talk about and promote their product.

# Buff Splitface Veneer



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## TRAINING & EDUCATION

### Waste is a Waste

*Continued from page 6*

• **Waiting.** Timing is also critical. An effectively managed fabrication shop assures a consistent flow of information and materials, both of which are important. Waves of jobs moving through the plant is a sign of operational waste. Waiting on needed information or material is a waste.

• **Unnecessary transportation.** A properly designed shop layout can lead to greater productivity overall. Generally, equipment should be staged to accommodate a short travel between stations in a sequential layout. Sometimes, growth with new equipment could mean that the new machine must be positioned where there is room rather than the ideal sequential flow location. A smart approach to address this is the use of mobile worktables rather than dry-wall carts or A-frames. The amount of material handling can be drastically reduced with this approach.

• **Poor quality.** Obviously, any part that must be remade or repaired is a waste. See

**“The opportunity to reduce costs is finite. The opportunity to increase throughput is infinite.”**

*Quality at the Source* in the July edition of the *Slippery Rock Gazette*.

Having said all that... So, waste is bad, either in material or labor. Waste in any of its forms will increase costs, which should be a “red flag” for every manager. Sales minus costs equals profits. We would expect every business leader to be aware of costs and routinely strive to reduce them in order to increase profits.



#### Value Added

However, it is important to note that the opportunity to reduce costs is finite,

whereas the opportunity to increase value added is infinite. If your ultimate goal in business is to reduce costs, you should lock the doors, because that the sure method to achieve the lowest cost of operations.

While you should be good stewards of your operating expenses, you should give the greatest priority of your attention to creating more value, aka Throughput. We define Throughput as “the measure of value added.” Essentially, every manufacturer converts an investment in raw materials into finished products. That conversion is measured as Throughput, which is expressed as \$T. There is no limit to how much \$T you can create. Greater productivity is accomplished by working on the right things at the right time. For more information on this topic, see *Throughput Accounting* in the April 2019 edition of the *Slippery Rock Gazette*.

For more information on how to effectively increase \$T and reduce waste, contact Ed Hill at *Synchronous Solutions*. Visit the website [www.SynchronousSolutions.com](http://www.SynchronousSolutions.com), 704-560-1536.

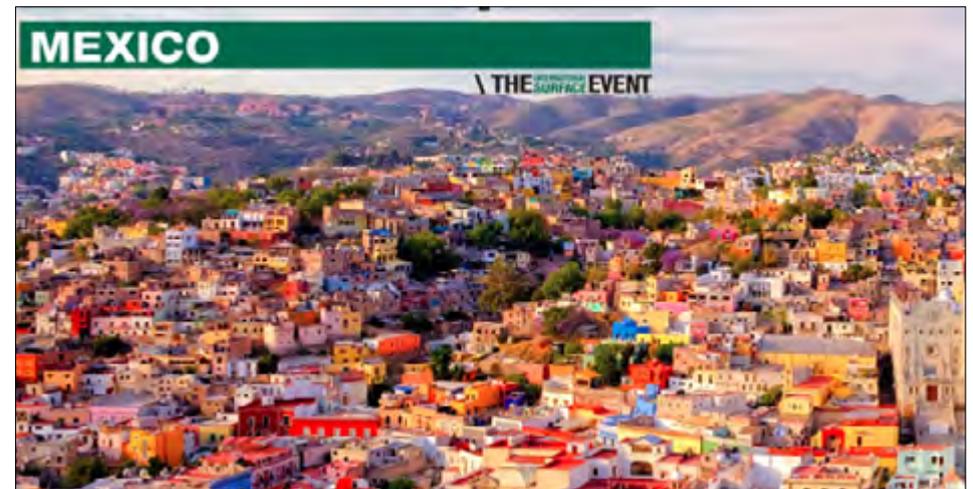
## StonExpo México Premieres at Obra Blanca Expo 2019

Obra Blanca Expo (OB Expo), a new tradeshow of the Tile Council of North America (TCNA), has joined with Informa, the world’s largest exhibition organization, to bring StonExpo to México. OB Expo with StonExpo México will take place October 15–17, 2019, at Expo Santa Fe, México City.

Started in 1987, StonExpo is an international exhibition of marble, granite, and other natural stones, along with the latest trends in stone design and fabrication machinery. StonExpo has been featured at The International Surface Event in Las Vegas since 2004 and this December will also be held in China at The International Surface Event in Shanghai. OB Expo 2019 will be the first time StonExpo is being presented in México.



Industry manufacturers and business professionals interested in more information about StonExpo and the brand expansion into México, should contact the event team at (972) 536-6431 or via email at [amie.gonzalez@informa.com](mailto:amie.gonzalez@informa.com) or visit [www.intlsurfaceevent.com/en/mexico](http://www.intlsurfaceevent.com/en/mexico).



**“This unique environment creates the perfect setting for StonExpo, one of the longest running and influential exhibitions in the world of marble and natural stone,”** said Amie Gonzalez, Show Director of The International Surface Event.

OB Expo specializes in interior and exterior finishes and materials used in the final stage of a new construction or remodel project, along with those unique items that allow an architect or designer to crown a project with final touches.

OB Expo has been designed to provide a superior experience for the visitor. The exhibition is organized by thematic pavilions where three days of events will provide an international platform for architects, interior designers, contractors, distributors, investors, and real estate developers to come together to strengthen relationships, discover the latest trends and product innovations, and above all, to be inspired.

“This unique environment creates the perfect setting for StonExpo, one of the longest running and influential exhibitions in the world of marble and natural stone,” said Amie Gonzalez, Show Director of The International Surface Event.

#### About TCNA—México

Tile Council of North America — México (TCNA—México) was incorporated in 2005 to represent tile and tile-related companies with manufacturing in México, and to develop and expand México’s ceramic tile industry, and advance the interests of Mexican stakeholders in national and international standards.

**“In the end, there is only one business plan that matters: Keep going. You either do or you don’t.”**

—*Linford Detweiler*

# Mark Herrington

*Continued from page 1*

During the mid 1990s, while still fabricating countertops, Mark had begun doing sculpture work for himself and getting a little more creative. He also wanted to get back to doing furniture design, and began wondering how to marry big pieces of stone to big pieces of wood. It wasn't that easy, he explained.

"By 2005, I was getting very exhausted by the level of work I was doing, and realized I could do one of two things. I could go full bore on the countertops and do really well, or scale back and feed my creative side. I chose the latter, and it was an evolution from 2004 to 2007. Part of it was just getting the confidence that I could at least make a living, and decided that I was going to do both artwork and countertops, at least for a while. I figured that if I could do just one countertop job per month, I could pay all of my expenses and work on my art, but it was really hard scaling back, because it's hard to say no to the clients I'd had for years."

As it turned out, while Mark was in the process of scaling back his client list and getting down to one countertop job a month, it's also when the financial crash came and began doing the culling for him. "This area being on the fringe, the work died, and I did not do another countertop for a year after that.

"At the time, I just figured that I'm now on the accelerated plan of dropping my clients, and by the time they started coming back, it was easy to say no. Moreover, I was having some success making and selling my art around 2011, and realized that this is truly what I want to do, regardless of how much money I make doing countertops."

**Above: Herrington's studio is located by the historic Orcutt granite quarry, which opened in 1889.**

**Right: Herrington at work at the 2017 Boothbay Symposium. This biannual symposium brings together Maine artists and an international guest to work in Maine granite every other summer.**



## *Material is Just a Stone's Throw Away*

Having grown up in Maine, Mark's father was an avid outdoorsman, and almost every weekend they would be hunting or fishing somewhere. "I was always out amongst stones and nature, and loved those rocky places on the streams where the big trout holes are. It's also when I fell into the idea of using local glacial erratics, because they were available right here. (*Editor's note: A glacial erratic is a rock that differs in size and type from what is native to an area.*) Glacial erratics actually became my entry in to form, so that as soon as I picked up the canvas (the stone), it wasn't blank. Once I started getting into that, it all started coming along pretty easily, and then it was just a matter of bringing in a slightly more aesthetic vocabulary. I like using Basalts, because I like the color contrast of the polish on the skin, particularly when I get them from the local gravel pit, because it goes orange due to the oxide. Whereas, if I get them on the beach, it's more like slate, and cleaned.

"I also started getting into colors and that's kind of where I am now. I spend a lot of time scouting for materials that are interesting. There is the outer form of the

stone, the inner mineral form of the stone – what it will look like when it is processed – and there is the form of the shape that I impose on it. Trying to balance all of those is very interesting."

Franklin and Sullivan are not only granite towns, but also have a bunch of gravel pits. Ninety percent of the sculpture in Mark's showroom came from these pits, from stones that had washed down river from Baxter State Park. "When you go in to these pits after a rain, it looks like a gumball machine," explained Mark. "It's really cool. We also have Ellsworth schist here that is really nice. I do like working with marble, but I cannot afford it, and local granite is not that hard. But my favorite stone is always the one I'm working with at the time. Sometimes I'll pick a stone thinking that it's one thing, and it winds up being chert. Chert is really hard, it doesn't like diamonds, and it takes twice as long to carve as basalt, a stone that diamonds do love. I don't use anything from my own quarry. It's much easier for me to just go over to my friend Conrad Smith, who operates the Sullivan Granite Company, and buy stone from him. The quarry is right across the bay."

*Please turn to page 21*

# Thermal Forming Quartz Slabs for Fun and Profit

**Brian Brutting**

*Photos by Brian Brutting*

Bending stone was once thought to be impossible, except for the thinnest veneers. With the advancement of engineered quartz came some creative ideas in bending hard surfaces.

Since engineered quartz is made with up to 10 percent resin, it is possible to manipulate the material much like solid surface fabricators did back in the day. The highest quality engineered quartz is still 90 percent real stone content, which is very important to successfully bend a slab of engineered stone.

Note that the process can be tricky and is not covered under any manufacturer's warranty, so it strictly creative. Never the less, I see tons on specification for thermal formed pieces all the time, and some of the very best fabricators get the lion's share of this very lucrative work.

The process really is not complicated – just time consuming – and it sometimes takes a little trial and error to achieve the best results.

All you need is the ability to mill material, a large source of hot water, clamps and a wooden form to bend your shape.

[Please turn to page 29](#)



A standard turkey fryer will work just fine to boil water. The goal is to raise the core temperature of the milled slab.



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## Do Engineered Countertops Stain?

*Continued from page 5*

Within each brand are several different product lines, surface finishes, and a vast array of colors and patterns. It's not practical to test every possible combination. To simplify things, I only tested polished samples, and I performed each test on a subset of brands and colors.

### Part 1: Staining Quartz Countertops

Manufactured quartz is marketed as stain resistant, but what does that really mean? There is no ASTM standard for testing the stain resistance of quartz surfacing, so I used a method that replicates real-world conditions. I put a variety of common household substances on samples of quartz and let them sit for two hours. Then I cleaned them off using the methods described on the quartz company websites: a little warm water and mild soap. Among the five brands, I tested the potential for staining on 45 different colors and patterns.

#### Staining Agents Tested:

Blueberry, Mongolian Fire Oil (oil infused with spices and peppers), Texas Pete hot sauce, turmeric, Kroger brand food coloring in pink and blue, grape juice, tomato paste, and Sharpie permanent marker

*Details of "a little warm water and mild soap":* 105 degree water, approximately 1/8 teaspoon of Bio Pac liquid soap, a Scotch-Brite non-scratch scrub

marker

#### Grading of Stains:

- **Moderate stain:** Clearly visible
- **Faint stain:** Noticeable but light in color
- **Very faint stain:** A subtle mark that was visible if you knew where to look. In many cases it resembled a shadow or a slightly darker area on the sample.

### The Results

**The Details:** Hot Sauce left a stain on three of the 17 samples. Caesarstone Cinder, Cambria White Cliff, and Viatera Celeste each had a slight, subtle stain from the hot sauce. The other 14 samples showed no visible effects. A paste of turmeric and water left a stain on most of the quartz samples. Of the 17 samples tested, ten showed a stain. All of the colors that did not stain were dark colors or patterns that likely made the stain less visible. The turmeric stains were either faint or very faint.



**Caesarstone Nougat with moderate stains from pink (upper right) and blue (lower right) food coloring. There is also the remnant of the letter F written in permanent marker.**

Food dye left a stain on most of the samples. Of the 19 different colors tested, the only ones that did not show some staining were the dark colored pieces. The most noticeable stains were on Caesarstone Marrone, Caesarstone Nougat, and Cambria Coswell Cream, Newport, and Whitehall.

Permanent marker left an obvious stain on every sample tested. The stain lightened somewhat with cleaning, but it was still prominent.

### The Bottom Line

Engineered quartz surfaces are stain resistant, but not stain proof. Food coloring, turmeric, and permanent marker were the most

sponge (both the scrub side and non-scrub side were used), and a standard cotton kitchen towel.

**What Stained:** Hot sauce, turmeric, food coloring, and permanent



**Food coloring was among the most pervasive staining agents tested. Other staining agents included turmeric, hot sauce, Sharpie permanent marker, grape juice and oil.**



Staining Results Food Dye		
Brand	Color	Result
Caesarstone	Apple Martini	very faint
	Buttermilk	faint
	Carbone	very faint
	Deep Ocean (dark color)	no visible stain
	Marrone	moderate
	Nougat	moderate
	Oyster	faint
Cambria	Coswell Cream	moderate
	Newport	moderate
	Templeton	faint
	Whitehall	moderate
PentalQuartz	Antique White polished	faint
	Cotton White polished	very faint
	Sparkling Grey polished (dark color)	no visible stain
Silestone	Altair (dark color)	no visible stain
	Lagoon	very faint
Viatera	Castle	faint
	Celeste	moderate

Note that individual slabs may be variable. These results are an approximate guideline only. Always evaluate and test the specific materials you are considering.

Results and diagram by Karin Kirk for the Natural Stone Institute

**On the left side, turmeric left a faint stain on Viatera Celeste. On the right side is a very faint stain from hot sauce.**



### Part 2: Cleaning Quartz Countertops

For the next series of tests, I used various cleaners and sponges to see if scrubbing or different types of cleaning products would damage the finish of engineered quartz samples. As I described in my previous article about manufactured quartz, there is a substantial hardness difference between the actual mineral quartz particles in these products and the polyester resin that binds the particles together. The mineral component of engineered quartz is harder than most abrasive cleaning products, but the resin is not.

It's important to note that the manufacturers of quartz products do acknowledge that it's possible to damage the surface with abrasive cleaners or scouring pads. Indeed, I found this to be true.

In the name of science, I went against the manufacturer's recommendations, because it's quite likely that a homeowner, guest, family member, or contractor may not be well-versed in the fine print on the manufacturer's website.

*Please turn to page 16*

“The disadvantage of men not knowing the past is that they do not know the present. History is a hill or high point of vantage, from which alone men see the town in which they live or the age in which they are living.”  
— G.K. Chesterton

## Braxton-Bragg Sponsors Summer Fun

*Continued from page 5*

Helping Hands is a yearlong weekday ministry for adults with special needs. The group works to improve or maintain life skills and does so by volunteering at many places around town, and at their home base of First Baptist Concord. Helping Hands strives to find everyone’s ability, and allow that to be used to feel a productive part of our greater community. They always need volunteers at the annual camp, and for ministry activities.

For more information, email Diane at [dknudsen@fbconcord.org](mailto:dknudsen@fbconcord.org), call 865.672.1445, or visit [fbconcord.org/ministries/special-needs/36/](http://fbconcord.org/ministries/special-needs/36/).

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# The Stone Detective

## The Case of “I’ve fallen and won’t get up!”

I grabbed my fedora and headed out the door to my favorite greasy spoon for a cup of joe and some breakfast. Just as was walking out the door I tripped over a shoelace, stumbled, and almost fell on my face. Little did I know that later that day I’d again be that clumsy, and it would help solve another stone mystery.

Luckily, I caught myself before I had a nasty tumble. I looked around and noticed the old lady across the street staring at me. I tipped my hat and looked back at where I had stumbled and pretended that I tripped over something on the ground. She just rolled her eyes and shook her head. I hopped in the ole Woody feeling a bit embarrassed at being eye-rolled by my silver-haired neighbor. I hope my eyes are still that eye sharp when I’m her age.

I opened the door to the diner and almost tripped again. This time I didn’t think anyone was looking until I sat down. Flo was pouring me a cup of joe and quipped, “Good Morning, hope you had a nice trip over here.” LOL... well I guess she noticed, after all. I took a sip of my coffee and ordered my breakfast. I wanted to make sure I had something in my stomach for the long ride to that afternoon’s

**Frederick M. Hueston, PhD**

inspection. I finished my ham and eggs, said my goodbyes to Flo and the regulars, and I was off for a four-hour drive to look at some mystery stains.

The inspection sounded interesting. A builder had called me last week with a problem: some limestone flooring had some brown stains appearing without a known cause.

Based on his description, it sounded like your typical moisture issues where the iron in the stone was oxidizing. So, I told him I could come down and take a look, record some moisture readings, and try to find out where the moisture was coming from.

I arrived at the address – a huge house. When I say huge, it was as long as a Walmart store, and looked just as big. Later, I would find out that the house sold for over 60 million dollars. I parked the Woody in the circular drive and headed for the front door. There was no doorbell, but a pair of large brass door knockers. Kind

of reminded me of the movie *Young Frankenstein*. All I was missing was lifting Teri Garr off the carriage and making the comment... never mind. Those of you who saw the movie know what I’m talking about.

A tall gentleman answered the door, who with a little makeup could have doubled for Frank Boyle playing Frankenstein. He opened the door and asked me to come inside. I was hoping he would have said “walk this way.” Sorry – another inside joke from *Young Frankenstein*.

He led me to an area on the



floor and just pointed to it. This section of the floor had a streaky brown staining pattern (see the pic above). I immediately took out my moisture meter and discovered the entire area was wet. When I took moisture readings in other areas, they were dry.

So, my next step was to ask some questions to see if I could determine the source of moisture. Mr. Frankenstein assured me that there were no leaks anywhere. I considered asking if I could remove a tile, but I stood up and tripped on my tool bag and almost landed on my face. Fortunately, I was able to put my hands out and fell like I was doing a push up. I was about to get up when I noticed an unusual, unpleasant smell. So I crawled around on the floor like a dog sniffing the grass. Funny I should say dog, because the entire area smelled of *eau de pooch*. I got up and grabbed my blue light and shined it on the floor. The floor glowed like Chernobyl! I looked around and saw no signs of dogs, so I asked if there were any dogs in the house.

Bingo! The owner had two little dogs. I asked what the maids used to clean the floor. (Yes, there was more than one maid.) He led me to a closet in the laundry room where I discovered a floor cleaner. I looked at the back and really couldn’t find any info, so I took out my phone, googled the name and, lo and behold! It had

a pH of 10 – way too alkaline for everyday cleaning.

Apparently, the two little pooches were peeing on the floor and the maids were cleaning it up with this cleaner. They were in fact flooding the floor with the cleaner, and mopping it up. This saturated the pores of the stone and caused the iron in the stone to oxidize. In other words, the stone was rusting. Once I discovered this, I was able to see that the brown discoloration had streak marks resembling mopping patterns.

Another case solved. I guess I better add olfactory detection to my list of inspection tools!

One final note: Frankie asked for a recommendation with my written report. I told him he could hire a restoration specialist to hone out the stained limestone flooring. I sent him the names of some reputable, certified contractors. Now, if only he can keep the pooches out of the foyer...

*The Stone Detective is a fictional character created by Dr. Frederick M. Hueston, PhD, written to entertain and educate. Dr. Fred has written over 33 books on stone and tile installations, fabrication and restoration and also serves as an expert for many legal cases across the world. Fred has also been writing for the Slippery Rock for over 20 years. Send your comments to [fhueston@stoneforensics.com](mailto:fhueston@stoneforensics.com).*



**“This. Changes. Everything!!”**

# The Blower Brigades

The sounds of the season are upon us—and I ain't talkin' the first rendition of "Jingle Bells" as merchants launch their Christmas sales on Labor Day.

Instead, I speak of leaf blowers.

Poke your head outside any waking hour between now and late winter, and you'll hear blower brigades blaring loudly.

Some folks object to this noise. They would prefer the more subtle, soothing sound of rake tines. A quarter-century ago, before leaf blowers evolved from casual trinkets to everyman lawn care necessities, I'd receive occasional phone calls about them from angry homeowners.

"Those (blankety-blank) things have ruined fall!" was the gist of this ire. "They're too loud! Whatever happened to raking leaves the

**Sam Venable**  
*Department of Irony*

old-fashioned way?"

I always noted an important factor about these calls. In nearly every instance, they came from posh neighborhoods where leaf-gathering chores were assigned to the hired help.

No wonder Mr. and Mrs. Bigbucks were upset! They couldn't sit on the veranda, sip cocktails, and enjoy a peaceful fall afternoon while Booger, Joe Billy, and Earl Gene were out there doing all the "scritch-scritch-scratching."

T'was ever thus, I suppose.

I'm too young to remember when the only sound of recreational transportation on lakes, rivers and streams came from oars, paddles and sails flapping in the breeze. There was



leaf blowers and outboards are considerably more muffled than the originals.

If that makes me an industry apologist, so be it. When your house is plunked in the middle of a forest, as mine is, you jockey a leaf blower from September through New Year's. It's a decidedly more efficient way to

no internal combustion interference back then. And even after outboards did arrive, what began as the quiet "putt-putt" from the occasional six-horse Johnson has escalated these days to the jet-roar of twin 250s.

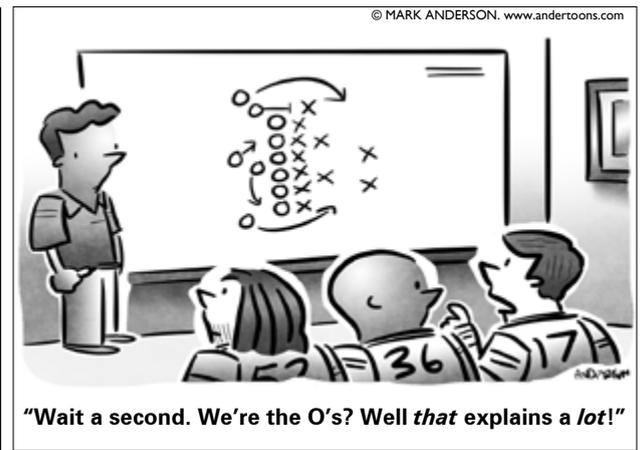
So yes, I do understand. On land or water, noise pollution is a problem.

But I also know it isn't going away anytime soon—even though newer

from maples, oaks, hickories, sourwoods, dogwoods and other deciduous trees after their autumnal beauty fades.

It's much easier on the arms, elbows and shoulders, too. Especially, ahem, if you're dealing with rotor cuff issues.

Yet as I work my way across the yard, it never ceases to amaze me how some individual leaves flaunt the laws of



aerodynamics.

They stubbornly refuse to be lifted into flight, no matter the hurricane swirling inches away. All it takes is a bent stem in the grass, or a serrated edge clinging just-so beneath an exposed root, and you'd swear they were anchored in concrete.

Go ahead. Varoom to your heart's, or temper's, content. They won't budge.

For Pete's sake, I've even seen certain leaves remain welded in place until the blower angle is slightly

adjusted. Then they rocket off to parts unknown. Amazing.

That's one problem Booger, Joe Billy, and Earl Gene didn't have to worry about as they "scritch-scritch-scratched" across Mr. and Mrs. Bigbucks' patial lawn.

*Sam Venable is an author, stand-up comedian, and humor columnist for the Knoxville (TN) News Sentinel. He may be reached at [sam.venable@outlook.com](mailto:sam.venable@outlook.com).*



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## What's Next?

I won't lie—I am a natural stone person. My kitchen is limestone. My master bath is onyx. I have granite and marble furniture tops, shelves and window sills. I do have one room that has a quartz windowsill and that's because it was the perfect color to accent the décor of the room. However, just because I am a natural stone person, that doesn't mean I don't get or understand what quartz is all about or what kind of role it plays in the stone market.

Unfortunately, though, the quartz market is a bit unstable right now. We all know about the tariffs and other fees that have been imposed on some of the products and some of the manufacturers. Factories are closing or relocating. To make matters worse, some relocated factories may have to relocate again as more tariffs and fees are being considered against other countries as well. Demand isn't dropping, but supply is. Prices are getting higher, and sometimes color and

**Sharon Koehler**  
*Artistic Stone Design*

quality are iffy. What's worse for your customers is that a color or even a brand you were selling last month may not even be available this month.

As always when something falters, there is something waiting in the wings to take its place. What will try to rise up? Personally, I hope the pendulum swings back to natural stone, but there are some other products out there that could make their presence known. We all know about solid surface (like Corian and Hi Macs), stainless steel, concrete, tile, wood and laminate.

What's left? Paper countertops, for one. Paper composite countertops are real. You may recognize the names of two manufacturers: Paperstone and Richlite (both manufactured in the U.S.). There are others.

Paper composite countertops are paper (largely recycled paper) and/or wood fibers combined

with resins and pigments. Simply put, all the ingredients are mixed together and heavily pressed and baked. The end result is a non-porous, durable product that can be used everywhere quartz can be used, and even a few places quartz should not be used, like outdoor kitchen countertops.

Like any surface, paper countertops have their pros and cons. Some of the pros include:

**Eco-Friendly**—the resins used are non-petroleum based, and a large amount of the paper/cardboard is consumer recycled.

**Clean**—the end product is non-porous, so bacteria and stains should not be an issue on these types of tops. If by chance it does stain, stains can be removed by sanding or in some cases, pulled out by using plain yogurt as a poultice.

**Flexible**—paper countertops are more than just kitchen countertops. They can be used anywhere you would think about using granite including tub surrounds, tabletops and outdoor kitchens.

**Consumer Friendly**—if nicked or scratched, the homeowner can simply sand out imperfections.

[Please turn to page 15](#)



Above: Richlight color spectrum. Below: Richlight Slate



## What's Next?

*Continued from page 14*

**Contribute Leed Points** – due to its high recycled content, paper countertops can contribute to LEED points.

One really big fabricator pro: it's easier to install than natural stone. It's lighter, easier to cut and shape, plus it seams together tightly. Seams are not invisible, but can be made minimal.

There are cons to consider as well:

**Heat Tolerance** – anything over plus or minus 350 degrees can scorch the tops. Trivets and hot pads are a necessity for this product – or simply don't put hot pots and pans on the surface. This is possibly a downside to using this product for an outdoor kitchen.

**Colors** – colors are limited and for the most part dark. Some of the lighter colors can show the product layers on the edges.

**Cannot be recycled** – that sounds weird because it is made of mostly recycled material, but because of the resins used, the product itself cannot be recycled. However, because of the ease of cutting, shaping and seaming, it can be repurposed to another project.

**Maintenance** – recommended daily maintenance is just a damp sponge (no soap, since that can leave a haze). Absolutely no bleach, according to the manufacturer. However, it is recommended that you apply food grade mineral oil on the top from time to time (like soapstone) to keep the surface looking new.

**Patina** – a weathered patina could be a pro or a con, depending on how you feel. As it ages, the surface will take on a patina and slightly change color.



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Paper countertops come in a wide variety of sizes and thicknesses ranging from ¼ inch up to 3 inches, and slabs max out at

**PaperStone Mocha tops installed in the Concordia University Science Lab, Mequon, Wisconsin. As a chemically resistant, UL Class A fire-rated material, PaperStone is a suitable and attractive material for science lab tables.**

5 feet x 12 feet. They also come in multiple (but limited) finishes such as honed and leathered. One website boasts that you can overhang 18 inches without brackets. Warranties seem to vary depending on manufacturer, from 10 years to lifetime, depending on use.

Are paper countertops poised to step into the mainstream market? Are paper countertops ready

to start replacing quartz? Will designers and salespeople start distancing themselves from a faltering and inconsistent quartz market?

Who knows? I guess we will just have to wait and see.

*Please send your thoughts on this article to Sharon Koehler at [Sharon@asdrva.rocks](mailto:Sharon@asdrva.rocks).*

## Do Engineered Countertops Stain?

*Continued from page 12*

Furthermore, the manufacturer's detailed cleaning recommendations may be too limited to get the job done if a surface gets stained.

Nonetheless, I did not treat the samples in an unreasonable or abusive way. I just imagined that my mother-in-law was on her way over, and I scrubbed intently.

I used the following methods, arranged from most abrasive to least:

- Scotch-Brite hand pad (containing silicon carbide) + Soft Scrub

- Scrubby side of Scotch-Brite kitchen sponge + Bar Keeper's Friend

- Scouring pad + Soft Scrub

- Scrubby side of Scotch-Brite kitchen sponge + Soft Scrub

(See *Scrubbing Results Chart*)

The Scotch-Brite "Ultra Fine Hand Pad" damaged the finish of every brand and every sample. After scrubbing with this heavy-duty scouring pad, an obvious hazy area was evident on every sample, regardless of whether

the sample was scrubbed for 30 or 60 seconds. This scouring pad contains silicon carbide, which has a Mohs hardness of 9. This type of abrasive pad should not be used on any synthetic quartz—nor any countertop surface, for that matter.

A kitchen sponge and Bar Keeper's Friend impacted most brands and colors, but not all. Bar Keeper's Friend is both abrasive and acidic. The abrasive action comes from powdered feldspar, which has a Mohs hardness of 6. This is softer than the mineral quartz, but harder than the resin that binds the quartz particles together.

Five of the six samples scrubbed with Bar Friend showed some hazing or dulling of the polished surface. The worst effects were on Cambria Templeton, which became distinctly dulled where it was scrubbed. Four other samples showed minor amounts of dulling, and Caesarstone Espresso showed no visible damage.

Results and Diagram by Karin Kirk for the Natural Stone Institute

Scrubbing Results		
Soft Scrub + Scotch-Brite 'ultra fine hand pad' (contains silicon carbide)		
	Product and color	Result
60 seconds vigorous scrubbing	Cambria Collybrooke	surface finish became hazy
	Cambria Coswell Cream	surface finish became hazy
	Cambria Hamilton	surface finish became hazy
	Cambria Sussex	surface finish became hazy
	Cambria Torquay	surface finish became hazy
	PentalQuartz Grigio polished	surface finish became hazy
30 seconds vigorous scrubbing	PentalQuartz Sparkling Black polished	surface finish became hazy
	Caesarstone Smoky Ash	surface finish became hazy
	PentalQuartz Cotton White polished	surface finish became hazy
30 seconds vigorous scrubbing	PentalQuartz Sage polished	surface finish became hazy
	Silestone Meropa	surface finish became hazy
	Silestone Meropa	surface finish became hazy
Bar Keepers Friend + scrubby side of Scotch-Brite non-scratch kitchen sponge		
30 seconds vigorous scrubbing	Caesarstone Espresso	no visible damage
	Caesarstone Lagos Blue	very slight hazing
	Cambria Templeton	surface finish became hazy
	PentalQuartz Mesa polished	very slight hazing
	Silestone Altair	slight hazing
	Viatera Equinox	slight hazing
Soft Scrub + Natural Value nylon scouring pad		
30 seconds vigorous scrubbing	Cambria Sussex	surface finish became hazy
	PentalQuartz Galaxy Polished	no visible damage
	PentalQuartz Lattice Polished	slight hazing
	Silestone Cygnus	surface finish became hazy
	Silestone Cygnus (scouring pad and water only, no Soft Scrub)	slight hazing
Soft Scrub + scrubby side of Scotch-Brite non-scratch kitchen sponge		
60 seconds vigorous scrubbing	PentalQuartz St. Laurent	no visible damage
	Caesarstone Nougat	no visible damage
30 seconds vigorous scrubbing	Caesarstone Ruby Reflections	no visible damage
	Cambria Whitehall	no visible damage
	Silestone Meropa	surface finish became hazy

Note that individual slabs may vary. These results are an approximate guideline only. Always evaluate and test the specific materials you are considering.

The Bar Keeper's Friend website offers advice for using their product with engineered quartz: "The key is to minimize contact time and not over-concentrate the product in a small area." The website also suggests using Bar Keeper's Friend for stain removal, rather than general purpose cleaning. That recommendation is supported by the results I found, as it appears that Bar Keeper's Friend is likely to damage quartz surfaces.

Similarly, the Caesarstone website cautions homeowners against vigorous scrubbing with Bar Keeper's Friend, advising use of only a small amount, with light pressure, and to not use a scouring pad. Again, that appears to be sound advice. However, the light touch needed to prevent damage may not be sufficient to remove a stubborn stain.

A nylon scouring pad and Soft Scrub damaged four out of five samples tested. I used a Natural Value brand heavy-duty scouring pad and Soft Scrub with Oxi cleaner. This pad uses recycled nylon fibers as an abrasive and is much softer than the Scotch-Brite hand pad. Nonetheless, the Natural Value pad and Soft Scrub still damaged most of the samples I tested.

[Please turn to page 23](#)

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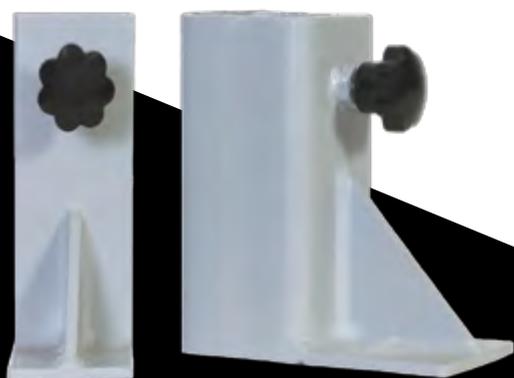
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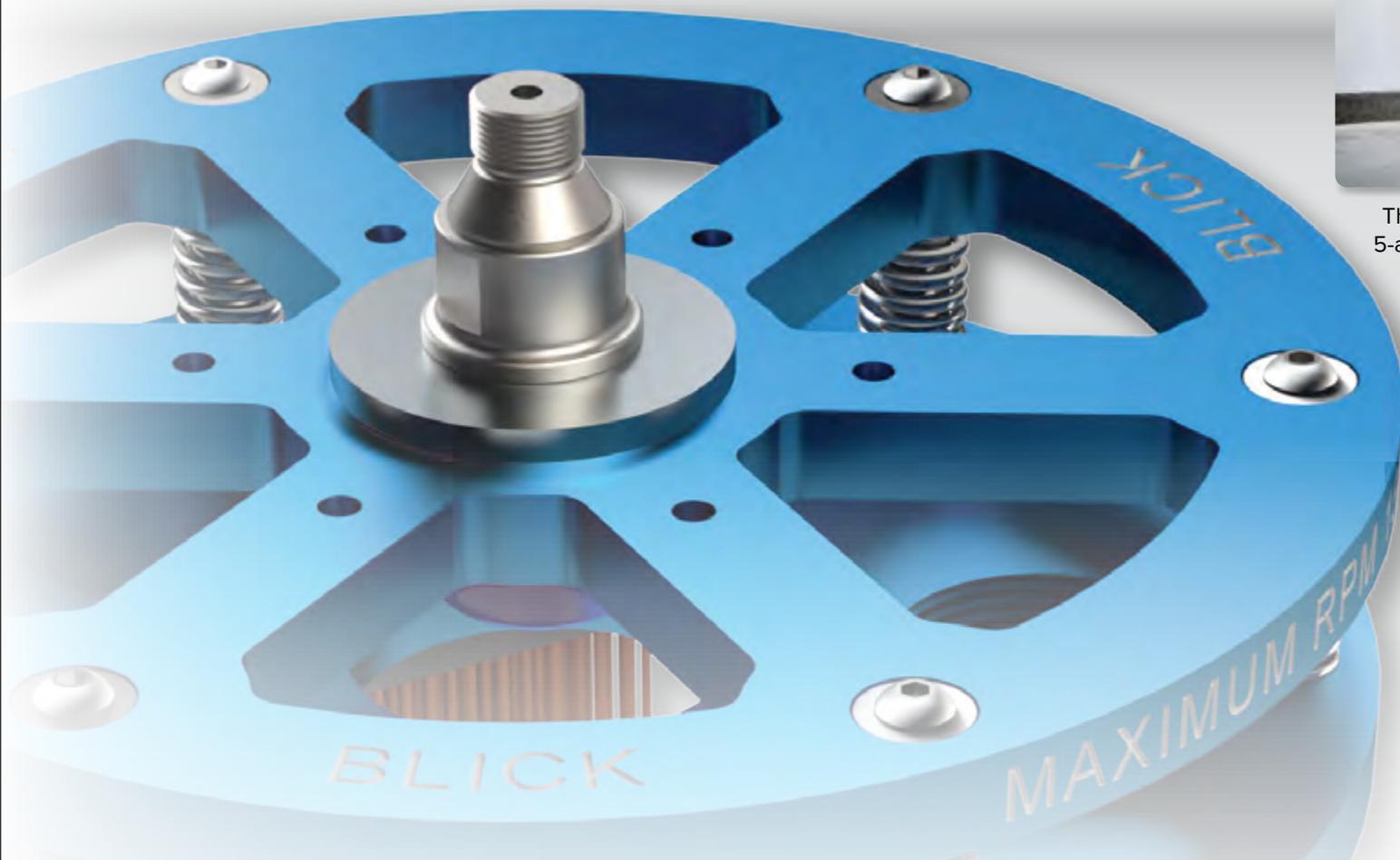
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# Stone Restoration and Maintenance Corner

## Targeted Restoration Strategy

**ON** large projects with tight budgets, how can you provide quality results? As always, it mostly comes down to managing the customer's expectations. Ultimately, it all boils down to what is really needed versus what you can provide, at an agreed-upon price.

Let's face reality: not every project has the budget to grind (lippage removal), hone, and polish a floor that needs some attention. In many cases, polishing may be all that is required to bring back a level of gloss that is satisfactory for the client. Even though some areas may require some light honing, like entry ways and pivot points, a 220 grit and 400 grit feathered may be all that is required before polishing, to achieve the desired effect.

Also remember: on larger projects, you may have to complete manageable areas by the end of each day. In other words, you may not be able to leave areas unfinished for any length of time. Other issues of concern may be that certain projects may have limited access availability. For instance, you may be only able to work on nights and weekends.

As an example, let's look at the Federal Courthouse in Knoxville,

**Bob Murrell**  
M3 Technologies  
Photos by Bob Murrell

Tennessee. The project parameters included over 15,000 square feet of marble which needed repairs, some honing, and an overall polishing. There are four different marbles in this project, all of which are 2cm (3/4-inch) material. Three of the marbles are from local Tennessee quarries: two types of Pink Tennessee, and some Imperial Black. There's also some Vermont Verde Antique (a type of serpentine), which seems to have been thrown in for a decorative touch.

The majority of the floors simply needed some good polishing to restore the desired luster. Majestic 5X Gold was used to accomplish all of the polishing on this project. Some heavily worn and/or etched areas required some light honing, using 400 grit TX Triple Thick diamond discs, prior to polishing. Entryways, choke points, and areas outside of restrooms (probably due to improper cleaning materials being spilled by the maintenance contractor) where etching and wear were problematic, all required honing with at least a 400 grit prior to polishing.



**Rust stain on Tennessee Pink before and after polishing with Majestic 5X Gold. Tennessee Pink marble has a naturally high iron content.**



There were also bad areas, which had salt buildup, beneath some drinking water fountains that needed repair. The Majestic 5X Gold took care of this issue very nicely.

Additionally, there were some setting bed failures which caused some pieces to shift and break over the years. There were also grout failures in certain areas like the transition joint lines between one hall or room and the next, as well as all around many of the window HVAC registers joints, in a large rotunda. It was decided that, due to expansion and contraction issues, these grout and masonry failures would be replaced with caulk.

Because the failed joints were approximately 3/8-inch in width, to do the caulk job correctly, flexible backer rod was first installed in the joints. This does a couple of important things. First, it limits the amount of caulk which helps

the joint to cure better, and also has a lesser tendency of adhesion release. Secondly, the round-shaped, flexible backer rod helps with forming a perfect hourglass bead in the joint. This gives more adhesion surface area and also allows for more flexibility in the finished caulked joint.

There was also lots of etching from random spillage of acidic materials (cola, orange juice, and who knows what) throughout the facility. This was mostly spot repaired using a 400 grit diamond hand pad and then polished afterwards with the 5X Gold under the floor machine.

Another issue that was noticed later was leftover floor finish around the edges and in some low grout joints. Because it was in small specific areas, this was simply removed using razor blades. Doing it this way was easier than trying to strip the floor with chemicals.

### SLIPPERY ROCK GAZETTE

This was a fairly large project that had many issues and a strict budget to adhere to. However, significant improvement was made to the installation in many areas. By targeting issues that the client specifically wanted addressed, the appearance of the overall floor was greatly improved. For instance, gloss level readings were improved by 25 to over 51 points on different stones using a calibrated meter. Several installation failures were also rectified along with many joint and breakage repairs.

Additionally, work opportunities were very limited. Some weeknights and weekends were all that were available, and only when the building was not in operation. Also, because this was a federal building, security was paramount and all work had to be escorted by a badged employee who could open doors for access to most all locations. Therefore, it was necessary to have this employee scheduled in advance. So you see, the work availability was not like most projects where you can come in and just start and work until you are basically finished. This project lasted many weeks, as the work was performed based on the opportunity of the building's and the escort's availability.

Overall, this project turned out really nice and the client was especially pleased with the results. Not every company will want to do this type of work but for those that do and can work flexible days and hours of operation, it can be very rewarding.

As always, I recommend submitting a test area to confirm the results and the procedure prior to starting a stone or hard surface restoration or maintenance project (oh, and use your smartphone to take plenty of before and after pics!). Also the best way to help ensure success is by partnering with a good distributor that knows the business. They can help with technical support, product purchase decisions, logistics, and other pertinent project information.

*Bob Murrell has worked in the natural stone industry for over 40 years and is well known for his expertise in natural stone, tile and decorative concrete restoration and maintenance. He helped develop some of the main products and processes which revolutionized the industry, and is currently the Director of Operations for M3 Technologies.*

**Before repair and polishing the Tennessee Marble floor**



**Gloss meter reading before and after polishing with 5x Gold**



**After polishing with Majestic 5X Gold Powder**

# Mark Herrington

*Continued from page 8*



When needed, Mark also makes money during the summer doing drywall and masonry work (walls, chimneys, fireplaces, walkways) with a friend in Bar Harbor to make up for the slow times from mid October to June.

## *The Schoodic Symposium Years*

"I was an assistant in the first Schoodic International Sculpture Symposium (SISS) in 2007 for my friend Don Meserve. Don had just had lung surgery, and I was assisting him to make sure that he didn't get too exhausted. It was at the time when I was making the transition from countertops to art and design. Later, as one of the featured artists, I was in the second SISS in 2009. Funny, I'd say 'symposium' and people didn't know what I was talking about. They thought it was like a scientific symposium where people get together and chat.

"The Littlefield Gallery in Winter Harbor, Maine opened around 2008, and they came and saw the 2009 symposium, and decided that stone sculpture was going to be one of their focuses, because there are so many Maine sculptors. They also liked this type of art, which helps to give us a market. Stone sculpture is a tough impulse buy, and I think one of the reasons is because it is carved and not impulsive. It is a material that says permanence, and that's what it's all about.

"We've also had stone symposiums at J.C. Stone in Jefferson, Maine; Viles Arboretum in Augusta, Maine, and one in Boothbay Harbor, Maine. These symposiums are interesting because they are not for public work.

You don't get paid for doing it, but you also need to cover your travel, tool and food expenses. J. C. Stone offers free materials to all the artists for this event, and the artists own their artwork, and can sell it afterwards, if they want.

"I've done pretty well in selling most of mine. I show at three Maine art galleries. The Littlefield Gallery in Winter Haven; Gleason's Fine Art in Boothbay, and June Lacombe's gallery in Pownal."

"When I started doing art, I knew it was going to be a long-term thing, and when I looked at the other artists who had made it, they did so because they stuck with it, and this is what I've done. Winter is a great time to sculpt in this shop. The light is good, it's quiet and there are no tourists, so I can get huge amounts done."

"Right now I'm trying to figure out a design for a charging table where all the electronics of the household can go with all the cords and everything. It's utilitarian art, because I see the utility. I'm not really sure what it will

look like or where it will lead to, but that's designing, which solves a problem, unlike art, that doesn't solve any problems at all except aesthetically. I'm also working on a fountain that makes a rain pattern, not a spray. I'm not there yet, but I do have a mockup.

"Luckily, these last couple of years, I haven't had to do any side jobs and have only done artwork, so to those looking to begin creating art I say this: To excel, you've got to be thick-skinned and stubborn. People will say the darnedest things about your work, and your motivation has to really come from inside. You have to be able to push through criticism and try to keep your self-doubt down, because if someone says something negative, you can't lose your motivation. Art comes from the inside and you put it out there afterwards, and you do get better. Don't do big things at first, just small things, and just do it!"

For more information about Mark Herrington visit [www.markherrington.com/the-studio](http://www.markherrington.com/the-studio).

**Herrington often has multiple works in progress in his studio. "I love to share how I do things— the tools I use, and helpful hints for how to do some things yourself, if you're interested in working with stone."**



**Above: Herrington, seated on one of his hand-made chairs in the gallery section of his studio, which includes rustic, functional furniture as well as smaller, more detailed stone and wood sculptures.**

**Left: There are usually well over 100 pieces on display. "My studio and gallery are open to the public by appointment or chance," says Mark.**

# Phenix Rising Over Jefferson City

**F**ounded in 1821 by the son of a frontiersman named Daniel Morgan Boone, and named after our second President Thomas Jefferson, Jefferson City, Missouri encouraged the growth of local industries based on its abundant wheat crop, such as flour mills and distilleries. It eventually became the state capitol, and over time raised three structures to house the state government. In 1917 construction was started on a new dome-topped building, by the New York architectural firm of Tracy and Swartwout. A majestic native-stone building was dedicated as the new Missouri State Capitol building in 1924.

This impressive building stands five stories high and is 437 feet long, and elegantly rests right beside a loop of the Missouri River. The Missouri State Capital is a symmetrical building designed in Roman Classical style. Its distinctive dome and two wings resemble the U.S. Capitol Building and it is one of the last state houses constructed in this formal style.

As you can imagine, after 100

**Codiak San Herrell**  
*Photos Courtesy Phenix Marble and Gary Galassi Stone & Steel*

years of wear and tear the exterior and substructure of the Missouri State Capitol Building has started to deteriorate. A major restoration project is slated to be completed in late 2020, and the main objective of construction is to make sure the building is properly preserved for many generations to come. The Carthage Marble exterior stone is from a historic quarry in Carthage, Missouri that is no longer being mined, and is being replaced by stone from Phenix Marble. All of the stonework on the interior of the capital is still up to standards after being completed in 1917 by Phenix Stone and Lime Company. Does the name sound familiar?

Phenix Marble, who supplied the original marble in the Missouri State Capitol back in 1917 under the name Phenix Stone and Lime Company, is still an active quarry and located only a few hours from the State Capital. So luckily, the



**Above: Construction on the Missouri State Capitol dome, c. 1918, and a replacement capital from the front portico. Below: inspecting and selecting slabs at the Phenix Marble quarry.**

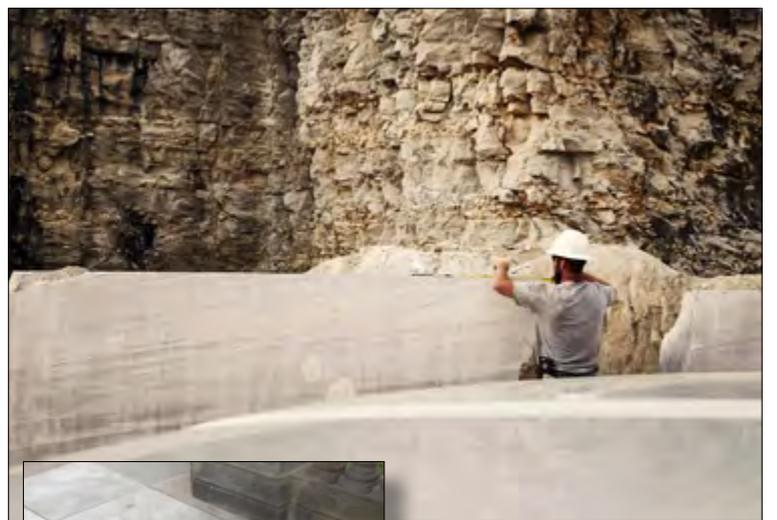
**Top & Below: Phenix Fleuri and Napoleon vein cut slabs**



restoration stone supplied by Phenix Marble has the consistency of stone color and pattern to match the pre-existing stone on the capital building.

Phenix Marble is located in Green County, close to the town of Walnut Grove, a town that thrived early in the 20th century thanks to its local, ambitious marble company, which at once employed hundreds of people – at its peak, about 500 local workers, and the company put its stamp on everything visible with its marble, including marble cladding on several businesses in town. The Walnut Grove cemetery is full of Phenix marble headstones, and if you look down while walking on a side walk in Walnut Grove, you will more than likely be walking on Phenix marble.

Although Phenix was inactive for some time in the mid-1930s due to the Great Depression, in



**Right: Walking on Phenix – Napoleon Fleuri tiles**  
 Photo by Brandon Roberts

the mid-1990s Phenix Marble was a small operation run by Freddie Flores, who was working old stone blocks left over from operations decades ago. To take operations to the next level, Phenix teamed up with Conco Companies in 2014, who dominates the production of construction aggregates and ready-mix concrete in the Ozarks region.

*Please turn to page 30*

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## Do Engineered Countertops Stain?

*Continued from page 16*

The worst effect was on Silestone Cygnus, so I repeated the test with the scouring pad and water only to try to see if it was the pad or the detergent that was causing the problem. The pad caused very slight hazing of the finish, but less than with the Soft Scrub.

A kitchen sponge and Soft Scrub mostly had no effect, except on one brand. Soft Scrub uses calcium carbonate as its abrasive material, which has a Mohs hardness of 3. Calcium carbonate is also known as calcite, which is the mineral that makes up limestone, marble, travertine, and onyx. Soft Scrub is well named, because it is indeed softer than other abrasive cleaners. The combination of Soft Scrub and the scrubby side of a Scotch-Brite non-scratch kitchen sponge did not damage most of the quartz samples I tested. The one exception was Silestone Merope, which was visibly dulled after scrubbing for 30 seconds with Soft Scrub and the sponge.

### The Bottom Line

Engineered quartz surfaces are made of two basic things: particles of mineral quartz and resin binders. The mineral components of manufactured quartz slabs are hard and resistant to damage from abrasives. But the resin binders are much softer, and as much as 25 percent or more of the surface area of an engineered quartz slab is made of resin, not mineral quartz. (For more details on this, see my previous quartz article.) When you look closely at how an abrasive cleaner damages a manufactured quartz surface, you can see that the resin gets scoured away, while the mineral grains are left intact. The result is an uneven and dull finish. An important takeaway is that even though the majority of an engineered quartz surface is made up of minerals, it's the fillers and binders in between the minerals that are likely to be less durable over time.

**Join us Next Month for Part 3: Removing Stains from Quartz Countertops**



**A Scotch-Brite abrasive hand pad damaged every sample, and is much too aggressive to use on any countertop. The left side of this sample was scrubbed, and is clearly damaged. Note how the quartz particles are unaffected while the filler around them is abraded. This illustrates the hardness difference between the mineral quartz grains and polyester resin filler.**



**Damaged finish from kitchen sponge and Bar Keeper's Friend (rough patch, left center) on this Cambria Templeton sample.**

## Welcome to the Tinfoil Hat Society

The Behney House Hotel in Myerstown, Pennsylvania, was evacuated after police responded to a reported bomb threat there on June 23, reported WPMT.

When officers arrived, they found David Oxenreider, 28, who lives at the hotel, and the homemade bomb he claimed to have made next to a dumpster outside the building. Oxenreider told police he made the bomb to get their attention because he was frustrated that his attempts to warn officials about aliens hadn't been taken seriously. According to the criminal complaint, Oxenreider said he encountered a UFO and aliens in 2014, who told him "humans need to start being good people, or else they were going to destroy the Earth with a nuclear laser beam." Police disarmed the device and arrested Mr. Oxenreider.

*Road Trip!*

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## Yes, Walmart Shunning Is a Thing

**AN** unnamed woman pulled a stunt in a Wichita Falls, Texas, Walmart on June 25 that got her banned from the store, hopefully for life.

According to NBC News, Police Sgt. Harold McClure said a store employee reported that the woman had eaten half a cake from the bakery, then attempted to buy the other half (for half-price), saying

she found the cake in that condition. While Walmart did not want to press charges, they did prohibit her from shopping at the store in the future -- a policy they're familiar with, after an incident in January at another Wichita Falls Walmart. In that case, a woman

rode an electric cart around the store's parking lot while guzzling wine from a Pringles can. She was also Walmart-shunned.

Sadly, there's a current craze to post unspeakable acts done in Walmart, for the sake of a little internet notoriety.

**AN** Oklahoma man was arrested after police say a routine traffic stop turned up a gun, a rattlesnake, an open bottle of whiskey and rod of "radioactive" uranium. Stephen Jennings was charged with possession of a stolen vehicle, transporting an open container of liquor and driving with a suspended license. Ironically, police initially pulled him over on June 26 for having expired tags.

Guthrie, OK Police Public Information Officer Sgt. Anthony Gibbs told reporters one Friday that during the stop, officers discovered Jennings was driving without a license and did not have proof of insurance for the black Ford Explorer he was stopped in.

Police arrested the man, who somewhat surprised law enforcement officers by admitting there was, indeed, a handgun in the vehicle.

Backup was called and a firearm was reportedly located in the glove compartment. Police also said they found an open bottle of whiskey between the driver and passenger seats, but noted not much was missing from the container.

Gibbs said police then ran the name of the passenger in the vehicle, later identified as Rachel Rivera, and found she was a convicted felon.

She was also arrested and charged with possession of a firearm after a felony conviction because the gun was within arm's reach, Gibbs said.

After making the arrests, police began the process of impounding the SUV -- when they really looked at the terrarium in the backseat.

Further inspection revealed that Jennings was in possession of a live Timber rattlesnake -- which was directly next to powdered uranium.

Gibbs said officers had to call in a hazardous materials disposal company to deal with the uranium rod, which he said was "radioactive," but at low levels, and basically not dangerous with brief exposure.

In fact, police were not able to charge Jennings because investigators found the amount of uranium he had was legal and could be purchased on sites like Amazon.com.

Gibbs said that the man joked with arresting officers he was actually planning to build a "super mutant snake" before explaining that he "scraps metal for a living" and got the uranium from a rod taken out of an instrument meant to detect radiation.

Jennings lucked out on being charged with possession of a dangerous animal as it is "snake season" in Oklahoma, and he had the proper hunting license. And fortunately for Jennings, showing extremely poor judgment and stupidity is not prosecutable, either.

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### **How does the Dry Dust Collection Booth Work?**

The Filter Project Dry Dust Collectors have specially designed cloth filtering sleeves inside the Dust Collector. The Dry Dust Suction Wall's powerful motors create a strong vacuum that pulls the dust particles horizontally from the work bench directly into the dust suction wall, then pulls it down to the bottom of the wall and inside the unit. The cloth filtering sleeves trap the dust and only allows 99.99% clean air to come out of the top. The dust is then collected in the catch basin draw at the bottom. Every day or once a week simply empty the dust that has been collected in the bottom of the catch basin. The Filter Project Dry Dust Collection Booth comes with a 3 ft (1 meter) extension enclosure that provides additional dust control and greater vacuum efficiency. 6 ft (2 meter) extension enclosures are available as options.

Filter Project Automatic Dry Dust Collector are available in 10 FT (3 meter) and 13 FT (4 meter). 6.5 FT (2 meter) available by special order only.



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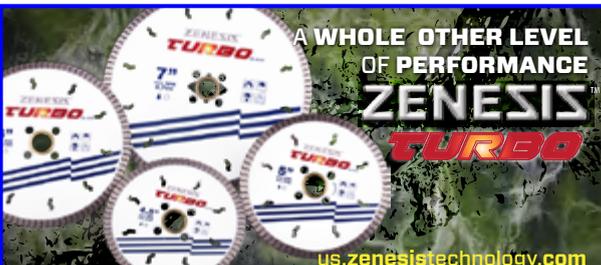
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## Ready, Set, Rowrrr!

AT first glance, the starting gate at Emerald Downs racetrack looks relatively normal. But then the gates open and the race begins, and instead of thoroughbreds, a mass of people bursts forth, running as fast as they can — while wearing oversized T-Rex costumes.

“The T-Rexes stand at the ready — and T-Rexes, away!” track announcer Tom Harris yells, as pre-historic — and hilarious — chaos breaks out on the track.

That Saturday’s race marked the third year in a row that T-Rexes have sprinted at Emerald Downs. After a video of last year’s event drew the attention of ESPN and lured more than a million viewers online, officials decided to make the race more formal, using the track’s starting gate to ensure a fair and equal start.

The new sense of propriety was short-lived. After the gates sprang open, two dozen theropods sped across the track in a flopping frenzy, their bodies whipping back and forth as the crowd hollered.

“Look how they run with their heads real high,” the track’s broadcaster Joe



At the wire, a dino named Regular Unleaded took the victory, holding off Rex Girlfriend by a tail.

The sight of fierce-looking dinosaurs bobbing down a groomed dirt racetrack has quickly become a fan favorite at Emerald Downs, which is owned and operated by the Muckleshoot Tribe in Auburn, Washington.

“The crowd response is the best part of the event,” says Cody Bennett, a sales manager at the TriGuard pest control company, which holds the race. “The kids love us, and we enjoy taking pictures with them before and after the race. It’s always enjoyable to hear the adults making bets with each other on which T-Rex will win.”

Withee said recently, as he previewed the T-Rex race. “That’s the style of T-Rexes, I guess: heads high.”

That event brought a full field like few others. To accommodate all the T-Rexes running, the racers were double-stacked into the gate’s 12 stalls. Despite the crowded conditions, a video of the race shows only one T-Rex hitting the dirt after struggling to keep up with its Cretaceous competitors.

“I’m so disappointed,” a comment on the track’s Facebook video says. “I literally only watched this to see how many would fall.” Others simply said the video was the best thing they’d seen all year.

*Please turn to page 28*

“Build for the day you will not see.”  
– Thomas Chalmers

# The Slippery Rock Classifieds

## For Sale

**Two 5,000 lb Kalmar Forklifts.** 2004 Kalmar forklifts — Fair condition. One has 7,900 hours of operating and other has 8,700. 48-inch forks, pneumatic tires, 3 stage lift. Both are in Raleigh, NC. Pictures upon request. Will provide great deal for both. Contact: Paul, 919-552-3368.

**1980 Salin Bridge saw.** 1980 Salin Bridge saw for Marble & Granite. 3 Phase electrical hook-up needed. I had the bearings replaced and fans for both motors and have receipts and pictures showing both motors running at RUN EM AGAIN MOTORS IN PHX a generator with single phase will turn the motors. Should have it put back together by Friday, 7-19-2019. Has Hydraulic lift table and rotating head and comes with 2 blades. Great for a new small business. Comes with 20' trailer, needs work on electric brakes. Bring a dually and drive it away, will not ship or tow to new location. \$8500.00. Scott, 602-284-7424, [scottw.nbs@gmail.com](mailto:scottw.nbs@gmail.com).

**ScandInvent AB - Cn Cut C-3 2004.** ScandInvent AB Cn Cut C-3 for sale. Purchased new in 2004 and in good condition now. This small bed, CNC is for sale by the original owner for \$12,500.00. Please call or email for pictures. Contact: Hunter Olive, 910-484-5277, [bette@oliveglassandmarble.com](mailto:bette@oliveglassandmarble.com).

**Edge Machine.** Marmo LCV 711 Flat edge machine. Plugged in and running when this posted. I purchased new in 2004. Needs TLC. If you're looking for mint condition, this is NOT it. If you want one that runs but needs some work and is priced right—this is it! \$8,000.00. Located in Mid-Michigan. Look up on You Tube Video; The Stone Specialist. Email for more info [edgemachine@stonespecialists.net](mailto:edgemachine@stonespecialists.net).

## Business Opportunities

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Ads not meeting guidelines will not be published.

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• To submit a print or online classified ad, use the online form at [www.slipperyrockgazette.net/listingform](http://www.slipperyrockgazette.net/listingform) –

you will be sent a confirmation email. Send other ad inquiries to [publisher@slipperyrockgazette.net](mailto:publisher@slipperyrockgazette.net).

• Maximum of 70 words or less per ad. All classified ads must be typed—No ads taken over the phone—No exceptions.

• Please review all your ad info before submitting – The *Slippery Rock* is not responsible for ads submitted with the wrong contact info or content.

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NOVEMBER 2019	WEDNESDAY, SEPTEMBER 25, 2019
DECEMBER 2019	WEDNESDAY, OCTOBER 23, 2019

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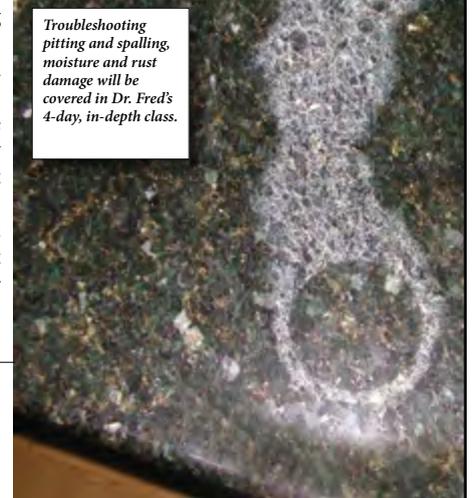
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## Ready, Set, Rowrrr!

*Continued from page 26*

It all started with TriGuard Pest Control of nearby Renton, Washington. In just a few years, the company says, its annual group outing at the track somehow evolved into its sales reps sprinting down a horse track wearing floppy dinosaur suits. “The first year, we attended the race in Hawaiian themed clothing,” said Cody Bennett, a TriGuard sales manager. “The next year we thought it would be funny to come wearing togas, and Emerald Downs was kind enough to have us race on the track in our togas. The dinosaur racing era began in 2017. The third, fourth, and fifth years we have raced in our T-Rex suits on the track, and everyone seems to love it,” Bennett said.

There’s no prize for the race winner — just bragging rights, Bennett says. Without going into detail, Bennett promised that next year’s T-Rex race would be even better, saying the company will find a way to “kick it up a notch.”

Emerald Downs holds other promotional races, including some that feature dogs — but if you’re picturing sleek greyhounds, that’s a little off. Instead, think dachshunds and similar breeds for last weekend’s Weiner Dog Sunday. Other dogs have had their day: Emerald Downs reports that a mighty pack of 72 corgis took over the track on August 4 for their third annual race.



## Don't Judge My Life Choices

**I**N retrospect, the first mistake was probably letting a stranger camp out in a tent on their lawn. It went downhill from there.

A homeowner in Crestview, Florida, allowed Matthew

Morrison, age 44, to bunk on the property as a favor to someone he was trying to help. But things went south on July 6, when Morrison entered the home without permission and threw lighted firecrackers under a sleeping 9-year-old girl’s bed.

The homeowner chased Morrison out of the house with a stick. Morrison told Okaloosa County Sheriff’s deputies it was a merely “prank gone wrong,” but the little girl was left screaming and terrified.

Lt. Todd Watkins told Fox News: “I’m not sure what he was trying to accomplish. The prank thing didn’t really sound like it

was a legitimate reason.” Well, maybe this had something to do with it: When Morrison was arrested, officers found 2 grams of methamphetamine in his pocket, which may have contributing to a misalignment of his funnybone.

Morrison had a prior criminal history, including drug charges; he was charged with burglary and possession of methamphetamine.

“I find television very educational. Every time someone switches it on I go into another room and read a good book.”

— *Groucho Marx*

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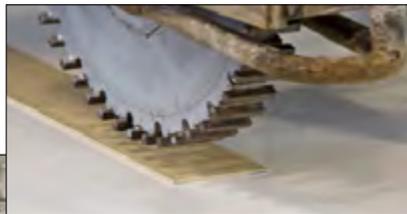
*Continued from page 9*

Not all colors of engineered quartz can be formed, though — only material with very tight quartz grains. For Caesarstone products, this includes the 2,000, 4,000 and 5,000 series slabs.

It is important to note you cannot use material with glass content in it. If you are not sure, check the manufacturer's content specs. Engineered quartz containing glass (including recycled glass products) will shatter under the bending process — a potential dangerous situation.

The hot water source can be as simple as three or four turkey fryers boiling water, or as complicated as a custom bath. As long as you can boil water it will work. You will also need a laser thermometer to check the water temperature.

Safety should always come first. Make sure to work in a well-ventilated



**Milling reduces the thickness to between 1/4 and 1/8-inch. The tighter the curve, the thinner the work piece will need to be.**

area, with good drainage. Wear protective gear at all times. Heat resistant gloves and eye protection are a must; boots and shop aprons are optional.

In constructing custom bend

**Below: Heating and clamping in process, and completed. Allow two to three hours for the piece to set and cool – longer in hot and humid conditions. Leave clamped until ready to use. Once unclamped, the resin in the material will start to revert to its original flat shape.**



projects, I always find a box joint is better than a miter joint for this type of application. It gives you a little more wiggle room to produce tighter seams. I just overcut the top part of the joint, extend the top flange, and shape after limiting the pieces.

Wooden forms to bend and clamp material to are important for the process. If you're not able to make your own, most mill workers can for a fee. The photos below show a well-designed custom form made by a milling shop, shown in use during the bending process. It slots together, with cut-outs built in for places to securely to clamp



**Custom-shaped top constructed with box seams. The excess material is removed with a grinder.**

the piece being shaped. Strap clamps will also work for the clamping process. Once the piece has cooled and set you need to immediately glue or build into your final shape.

Why learn to thermal form? It is hard enough to make a profit in the stone business. The math is simple: you can make ten times more on custom shaped jobs than on other projects. Visit [www.youtube.com/watch?v=je3-CSw\\_W5c](http://www.youtube.com/watch?v=je3-CSw_W5c) for a demonstration of the process.

**Brutting and a box-built see-saw.**



**Right, top: The water needs to be boiling to make sure it doesn't cool too much in transferring from the pot and pouring on the work piece. This is a job for three workers: one to pour, and two to evenly bend the piece, and tighten the clamps.**

# Phenix Rising

*Continued from page 22*

Although Conco had little experience in this type of mining, it saw the historical value and overall potential of Phenix Marble, and the Phenix/Conco relationship was born. Conco brought Phenix Marble opportunities through a larger-scale mining process that they could not accomplish by themselves at the time, enabling such projects as the Missouri State Capital.

The Green County, Missouri-based company of Phenix Marble offers two different cut options of marble: the historic Napoleon Gray, and Fleuri. Both are gray in color and are offered in three finishes: polished, honed or leathered, upon request. Both materials are used in the Missouri State Capital and have their own distinctive color and variation. Napoleon Gray is dependably directional, with veining flowing characteristically long ways across the slabs. In fact, this distinctive veining is one way to identify Napoleon Grey.



However, each Fleuri slab is also distinctive, with many different natural variations, and unlike vein cut Napoleon, Phenix Fleuri is known to show unique features like fossils and starfish in the face of the stone. There is actually a map in the state capitol building to guide you to all the unique fossils located in the stone around the building!

Phenix Marble does not fabricate all of the material for the State Capital, due to some of the intricate and complex stone work, which requires specialized machinery. Phenix Marble does directly fabricate the less



**Fossil shells in Phenix Fleuri are random and unique.**

**Below: Shipping a load of pre-cut slabs by flatbed.**

**Photos (2) by Brandon Roberts**

complex pieces such as the pavers and stairs. For the more detailed pieces that demand precision machinery and programming, Phenix Marble ships slabs by truck load to a fabricator, where the slabs get cut to various sizes based on what section is being worked on. Mary Neely, Phenix marble Director of Marketing, credited their success to their fabrication partners. "We're fortunate to have good relationships with shops around the country, which really expands our capabilities."

Located only one state over, one key fabrication partner is Gary Galassi Stone & Steel, located in Romeoville, Illinois. To date, Gary Galassi Stone & Steel has received approximately 167 slabs of Phenix Marble for the Jefferson City capitol project, or roughly 6,800 square feet. The company was founded and is owned by Gary Galassi, who brought the Missouri capitol job to the company, and is responsible for most of the job verification orders today.

The pieces destined for the capital's exterior renovation are exquisite. The procedure as well as the quality that Gary Galassi Stone

and Steel maintains seems to be a perfect fit for Phenix Stone and the restoration of the capitol building. The process within Galassi starts with original, removed carved pieces being sent to a lead Carver, who duplicates the original piece. It is three-dimensionally scanned, processed and converted into a CNC program that boasts less than 0.1mm error over the entire piece, so the carved piece can be uniformly mass produced. The pieces are roughed out by their Breton 5-axis CNC and then finished by one of their very skilled carvers.

To keep projects moving and quality high, Gary Galassi Stone & Steel sends most pieces directly into fabrication after producing a purchase ticket, to ensure the best possible fabrication path for restoration projects. Once everyone involved, from draftsman to carvers, completes their portion of the fabrication, a note on quality is then presented to the Plant Managers to move each piece to the next step. This is to ensure that these pieces will meet the expectations of the customers – in the case of the capitol restoration, the customer is the state. According to



## SLIPPERY ROCK GAZETTE

Chris Galassi, Vice President and General Manager of Gary Galassi Stone & Steel, the strictest level of quality control is meeting their own shop's standards.

After fabrication is done by Galassi, the material is then shipped directly to the State Capital to be installed by another Illinois company, Bulley & Andrews Masonry Restoration Company (BAMR). Galassi and BAMR have been working together for about 15 years and have completed many high profile jobs in the U.S.. "Very good team communication between both our parties on this job and others in the past are what have made us so successful in jobs such as Missouri State Capital," says Chris Galassi.

Phenix Marble also has their marble in the Oklahoma City Streetcar Building where they matched historical Phenix Marble on the exterior of the Oklahoma City Union Station. Phenix stone also graces the Nelson Atkins Museum of Art and the Pickwick Plaza, both located in Kansas City, Missouri. They have also completed several projects for universities including Dartmouth in New Hampshire, and closer to home, the Missouri State University, as well as establishments and residences throughout Missouri. If you do not know who Phenix Marble is and you are living in Missouri, there is a good chance you have already encountered this beautiful Missouri-mined marble, and not realized it is "home grown".

For more historical information, visit or contact the Cole County Historical Society, 109 Madison Street, Jefferson City, MO, 65101; Phone: (573) 635-1850. For a unique tour of the Missouri State capital grounds, visit [capitol.mo.gov/who-we-are/](http://capitol.mo.gov/who-we-are/) Digital Tour.

**Left (3): Processing a cubic block starts with roughing out the shape with a Breton 5-Axis CNC. Then, the workpiece gets finished by hand by one of the talented Galassi stone carvers. Below: replacement flower; the original, worn ornament is at bottom right.**

**Photo by Brandon Roberts**





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