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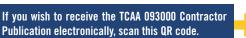
TILE CONTRACTORS' ASSOCIATION OF AMERICA | THE VOICE OF SIGNATORY TILE/STONE CONTRACTORS



BOOK TOWER PROJECT—ARTISAN TILE INC., BRIGHTON, MI

FEATURED INSIDE

Meet TCAA's New President Bridging the Workforce Gap 2022 Tile Trends





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– Michael Ward, Vice President of Sales, Portobello America



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FROM THE PRESIDENT



Michael Kriss Krisstone LLC TCAA President

GREETINGS, My Fellow TCAA Members!

assumed you would want to know who your TCAA president will be for the next two years, so here we go.

It was June 22, 1988, when I, along with my 5-year-old son and now ex-wife, came to the United States from a country that no longer exists - the Soviet Union, also known as the USSR. We were allowed to bring four suitcases and purchase from the government \$270 for our family of three at the rate of 1 dollar to 0.62 rubles! With the help of a distant relative, we settled within a Jewish community in The Bronx. We started learning English and sent our son to public school, asking him to learn one word every day in order to teach us the language. He was enormously proud on the first day when he came home to tell us his first English word - "banana." We were hysterical because first, he loved bananas, and second, banana sounds almost the same in English as it does in Russian.

I grew up in Odessa, the city on the Black Sea, now part of Ukraine. I love my city,

called "The Pearl of the Sea" because of its distinguished Odessa accent and humor. I graduated from the Odessa State Academy of Civil Engineering and Architecture, and for as long as I can remember. I always wanted to be involved in construction. Education in the Soviet Union was free, but every summer break for three full months. we had to work without pay in the industry in which we were majoring. Who knew, when I was installing mud-set ceramic tiles on the walls of a swimming pool back in the summer of 1980, that eight years later, I would get into the ceramic tile industry in the United States? And that 28 years later, I would begin serving on the TCAA Board of Directors, and then 42 years later. I would become the president of TCAA!

This is my first message to you as TCAA's President, and although I do not want to get political, I cannot stay silent with what is going on in Ukraine and my native city of Odessa. The Russian aggression must be stopped, and the ruling of a mad man (Putin) must be brought to an end.

The second year of the pandemic is almost over, yet we are still facing plenty of Covid-19 job site restrictions, ever-increasing costs, material availability issues, a shortage of skilled union labor, and longer payment turnarounds. At the same time, I see more projects from 2019 and 2020 coming back to life, as well as new projects. I am optimistic that the future of the tile industry and the construction industry as a whole is very good. I am very humbled and honored to be your president for the next two years. Thank you for letting me into your lives.

THANK YOU FOR Letting me into Your lives.

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1 PREP REDGARD Waterproofing and **Crack Prevention Membrane**

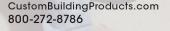
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PUT YOUR 2 CENTS IN!



or the last number of years TCAA has had a program of asking signatory contractors, through their local associations and local Bricklayers and Allied Craftworkers (BAC) unions, to provide funding for TCAA's national efforts. This funding is through 2 Cents Per Hour, provided through a local area's promotion fund. Hence the campaign name, "Put Your 2 Cents In!" To date, seven regional areas have joined in: Philadelphia, Chicago, Northern California, Seattle, Cleveland, Toledo, and most recently, Hawaii.

I was in Hawaii (Yeah, I know, tough duty!) in conjunction with The International Masonry Institute (IMI) where we hosted a dinner and a presentation for the Tile Contractors Association of Hawaii and BAC Local 1 Masons Union of Hawaii. Scott Conwell of IMI and I showed how, working together, our two organizations represent the best interests of all BAC signatory contractors and BAC union members. Both of our organizations





have seats on the Tile Council of North America (TCNA) handbook committee and the American National Standards Institute (ANSI) standards committee. We both work to provide the building industry with the best ceramic tile companies and installers through professional development with programs like Trowel of Excellence for contractors and Advanced Certifications for Tile Installers (ACT). Additionally, the BAC and IMI provide national Department of Labor certified apprenticeship and training programs. Together, we offer technical and educational programming to the architectural/design community and BAC signatory contractors. TCAA also has representation on the International Pension Fund (IPF) and has contractor members who sit on the International Union of Bricklayers and Allied Craftworkers (IUBAC) Tile/Marble/ Terrazzo labor management committee.

When we have the opportunity to present all of this information to local contractor associations and local BAC unions, it becomes obvious that there are many benefits to supporting national representation by TCAA. Everyone realizes that by collectively "putting our 2 cents in," we all get a much bigger bang for our buck!

John Trendell TCAA Labor Committee Chair Trendell Consulting LLC





Ed Metcalf Co-founder of Metcalf Advisory Services LLC

Bridging the Workforce Gap The Role of Union Apprenticeship

Most employers in the United States face unprecedented challenges resulting from the high demand for and low supply of available. adequately trained workers. In December 2021. the US Bureau of Labor Statistics (BLS, www.bls.gov) reported a record-high 10.9 million iob openings as well as a record high number of workers voluntarily leaving their jobs each month. Over four million "quits" in December 2021 translates to 2.9% of the workforce. Both measures are fully one-third above their previous recordhigh levels.

This problem was already impacting every sector of our economy even before the onset of the pandemic, the effects of which triggered additional factors including widespread mandatory business closings and associated sudden layoffs, massive transfer payments disincentivizing work, accelerated retirements, work-from-home scenarios, and the emergence of discussions and choices relating to work/life balance.

By mid-2020, the construction sector had been deemed "essential" in most states,

while much of the rest of the country remained locked down. Consequently, the disruption to employment continuity within the construction sector was less in magnitude than that inflicted upon most other service sectors. Even so, the BLS reported over 337,000 construction job openings in December 2021.

This predicament stems mainly from a demographic reality apparent on the horizon for years: our declining national birth rate barely exceeding the rising death rate; the large Baby Boom generation transitioning into retirement; highly experienced craftworkers retiring at an alarming rate; and younger cohorts of the population disinclined to the consideration of a career in trade.

Clearly, accelerating the rate of recruitment, training, and replacement of craftworkers is critical to the long-term health of the tile and stone trades as well as to all participants in the construction ecosystem. Given these facts, what solutions are being offered by our industry organizations? The following describes what two well-established North American construction institutions are doing to ensure an ongoing supply source of trained and qualified workers.

The International Union of Bricklayers and Allied Craftworkers (IUBAC) currently represents more than 50,000 active members and, having been founded in 1865, holds the singular distinction of being the oldest continuously operating labor union in the USA. The International Masonry Training and Education Foundation (IMTEF) provides training, certification, and continuing education services to BAC members and BAC signatory contractors.

Together, BAC and IMTEF offer a model for modern apprenticeship. Well-coordinated efforts and large investments over the past decade have enabled implementation of an effective multipronged training and apprenticeship strategy by leveraging key union resources: knowledge, training capabilities, and training infrastructure.

According to current BAC Secretary/Treasurer Bob Arnold, "The apprenticeships and BAC's approaches have evolved significantly over time, and recent enhancements to our program have been accelerated by advancements in technology and communications. For example, our student, instructor, and testing manuals have all been updated, digitized, and made fully accessible online. Today, we offer far more opportunities for distance learning than ever before."

In early 2015, Arnold, while serving in his previous role of National Director of Apprenticeship and Training for the International Masonry Institute (IMI), initiated a five-year comprehensive overhaul of the union's apprenticeship program. "We set out to re-vision the entire program, to standardize requirements, and to rewrite all



Anthony DiPerna, National Director of Apprenticeship and Training for IMTEF. Credit: IMTEF

the documentation. Each local is responsible to wholly adopt the program within their local training centers and to support signatory contractors in executing their key function of overseeing on-the-job training," Arnold notes. The result of that massive effort is the new US Department of Labor-approved BAC Apprenticeship Training program. Certified in late 2019, it is now being successfully implemented through home study, at training centers, and on job sites across the country.

"Standardization assures that an apprentice trained in one part of the country possesses a skill set that is truly portable on a national basis," says Anthony DiPerna, Arnold's successor in the role of National Director of Apprenticeship and Training, now under IMTEF. DiPerna is responsible for the operation of all BAC/IMTEF training centers, including the IMI's flagship national training center in Bowie, MD. "At Bowie, we focus on training the trainers responsible to uniformly implement our apprenticeship programs coast-to-coast. We also offer specialty and safety training, upgrade training for journey workers, and new product education." DiPerna adds. "The facility is self-sustaining in terms of programming and accommodations and food service for groups of up to 50 or 60, and we maximize the time our trainees invest in being here".

Upon signing onto a collective bargaining agreement. signatory contractors are obligated to maintain a ratio of apprentices to journey workers, which in the National Apprenticeship Standards is noted as one apprentice to five journey workers. Currently, the actual national ratio is slightly below the 1:5 goal, but "is very close and is much improved verses prior years," Arnold notes. BAC has approximately eight thousand apprentices in various stages of training, with about eleven hundred of them focused on the tile, marble, and terrazzo (TMT) trades. Arnold anticipates "over one thousand" TMT retirements over the next four to five years.

A standardized structure and local facilities in which to conduct classes and hands-on training are crucial components to supporting the involvement of signatory contractors. "Everything rests on the contractors to employ and truly develop apprentices," says Bernie Grosswiler, field superintendent at Corcoran Tile & Marble Company of Brooklyn Heights, OH. "We get fantastic support from our local training center. They've made some really good changes there recently. The overall improvements to the apprenticeship program over the past few years have made it 200 times as effective as it once was."

"We are big supporters of the apprenticeship program and make it a point to take ownership of all aspects of on-the-job training. Our journey workers mentor our apprentices in all areas relevant to their career and skills development," adds Greg Games, president of Premier Tile and Marble in Gardena, CA. "We work hard to retain apprentices from the beginning to the end of their training, and it works out that way most of the time, which is good for everyone." Both Games and Grosswiler note that their firms are consistently at or above the targeted 1:5 ratio.

With the apprenticeship program overhaul completed, union priorities are now shifting to mobilizing and organizing. According to DiPerna, "In recruitment of apprentices, the big issue we face is simply awareness. We are spending a lot of time working on solving that. Getting young people and their parents to become familiar with the trades as a career choice is different now than it has been in previous times." For example. the union now engages on a national level with the American Counseling Association to raise awareness of the benefits that the union feels should at least be explained to high school students as they consider career paths. "Parents are typically amazed to learn of the financial benefits that their children can attain after a few years in the trade. being paid while learning. As these facts are contrasted to the level of debt often required to obtain a college degree of perhaps uncertain value, their thinking sometimes changes," says DiPerna.

Job Corps, a US Department of Laborfunded residential education and job training program for at-risk youth, is a growing source of apprentices for BAC. National Job Corps Director for IMI Jonas Elmore himself entered BAC through Job Corps. According to Elmore, "IMI has a contract to provide training within 39 Job Corps centers across the country. We provide the instructors who guide Job Corps students through a selfpaced brick or tile 'pre-apprentice' program. Upon completion of all the program modules, graduates earn the right to join any local BAC in the country." In 2019, IMI efforts with Job Corps fed 80 new apprentices from diverse



Jonas Elmore, National Job Corps Director for IMI Credit: IMTEF

backgrounds into the BAC. "In recruiting young people today, you've got to meet them where they are in terms of how they communicate," says Elmore. "And we've got to reach them early and often, and as early as in middle school, to successfully engage with them about career possibilities."

"Recruitment and awareness are issues that we need help with now – from all stakeholders," Arnold remarks. "We expect our locals and encourage our signatory contractors to be a part of this process of creating awareness and to engage in spreading the word internally and externally".

Many across the tile and stone industry materially support BAC and IMTEF training. "We have received a great deal of support from the tile and stone industry manufacturers, who have donated product for use in various programs at our training centers. We encourage all industry partners to reach out to their local training centers to discuss their needs and to help them fulfill their mission," Arnold concludes.

Information on BAC/IMTEF training centers can be found at **www.imiweb.org**.

Ed Metcalf is co-founder of Metcalf Advisory Services LLC. A 2017 recipient of the TCAA Carl V. Cesery Award, Ed be contacted at edm@metcalfadvisory.com.





Artisan Tile Inc.

• Brighton, Michigan

Book Mixed-Use Development

94,000 Square Feet of Ceramic Tile in Historic Skyscraper Redevelopment

owering over the historic Downtown Detroit District on Washington Boulevard resides the original Book Building of 1916 and the Book Tower of 1926. The 13-story. Italian Renaissance-style Book Building is adjacent to the 476 foot, 38-story Book Tower skyscraper, one of Detroit's tallest and oldest buildings. Vacant since the mid-1980s. both buildings began coming back to life when purchased by Bedrock Real Estate in 2015. Artisan was thrilled be part of another project in the Motor City.

Large format tile in a nearly 100-yearold building with lower ceilings and tight corners in a crowded building space creates logistical opportunities. Artisan Foreman Eric Manzaroli and General Superintendent Andy Kornoski worked with local supplier, Dwyer Marble and Stone, to cut the material before moving it into the guest rooms. This would not have been possible without the collaboration of a local distributor and thoughtful installation crew.

Self-leveling underlayment was used to modify the bathroom floors to meet TCNA installation standards as well as the heights established by the adjacent wood flooring in the guest rooms. Due to the undulation in the guest room substrate, the wood flooring had to be installed first for the stone threshold and tile flooring requirements to be met.

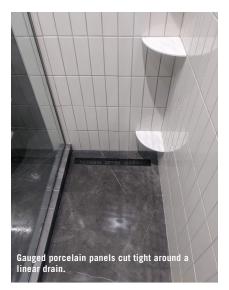
Estimator Jeff Dean spent hours in preplanning to identify time saving opportunities to alleviate an overly ambitious schedule. ProBase II custom shower pans by Noble Company were part of the solution. This allowed Artisan to load a full floor of pans



in a fraction of the time, eliminating bulky wheelbarrows and the traditional mortar bed with sand and cement.

The natural cupping of the Naka Glazed tile (36,000 square feet) and high absorption rate created additional challenges. Artisan consulted TEC representative Charlie Renner on best practices. TEC technical services reviewed and tested the tile and suggested pre-soaking the tile and using non-sanded grout with TA-869 grout additive.

The project designed by ODA Architecture



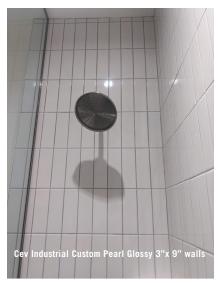


P.C. with Brinker/Christman JV serving as general contractor, included a total of 94,000 square feet. Work began in May 2021 with an expected completion date of October 2022.

TILE IN THE GUEST ROOMS INCLUDED:

• 36,000 square feet of Naka Glazed custom graphite anti-slip .5" x 2" (floors/ wainscoting)

• 47,000 square feet of CEV Industrial



Custom 19.618 Pearl Glossy 3"x9" – Ceramic Body (shower/tub walls)

• 800 square feet of Herald custom ridge 2.5" x 8.5" (upgraded unit kitchen backsplash)

• 7,000 square feet of Ariostea Ultra Marmi Grey soft marble, Dwyer Marble and Stone 120" x 60" x 6mm (upgraded unit bathroom floor/wainscotting)

PUBLIC AND BACK-OF-HOUSE SPACES INCLUDED:

- 1,000 square feet of Umi Naya Arugula Glossy 2" x 4" (CT101/102A)
- 200 square feet of Umi Sumasshu Cobalt Glossy 2.5" x 9" (CT203)

• 200 square feet of Umi Basic Heather Grey Smooth Glossy 1" x 4" (CT933)

• 100 square feet of Umi Calm Moss

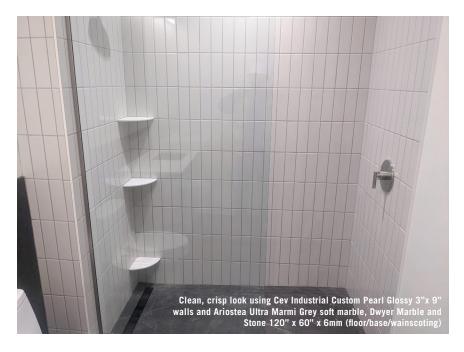
Glossy .5" x 4" (CT943)

• 1,000 square feet of Santos Heritage Field Snow Crackle 6" x 6" (CT102C)

• 7,000 square feet of Strada Rain Natural 24" x 24"

For setting and prep, Artisan used Noble ProBase II, Noble preformed curbs (custom sized), TEC multi-purpose primer, TEC Level Set 200, TEC power grout, TEC Ultimate Large, TEC Ultimate 6+, and TEC Accucolor non-sanded grout with TA-869 Grout Additive.

The installations used included F205A-20 (floors), W244E-20 (showers/tubs with one wall exterior), B412-20 (typical tub), and pre-slope pans by Noble Company, a preformed composite made from durable expanded polystyrene (EPS) that creates a code required 1/4" per foot slope under the waterproofing membrane in a shower.



Artisan is excited to see the revitalization efforts being put forth in downtown Detroit, especially in the historic buildings, and is proud to be part of the historic area's renaissance.

ABOUT ARTISAN TILE INC.

Founded in March of 1995 from humble beginnings. Artisan Tile has grown to be an industry leader in tile and terrazzo. They are thankful for the confidence their partners placed in them at an early age by trusting them to help build some of the most prestigious projects in Detroit and throughout Michigan. It's easy to spot the talent of their people in many signature projects around town or on a campus throughout the entire state. Artisan is looking forward to more successful projects as they continue to build a future throughout Michigan, honoring those who made it possible. Artisan is a member of TCAA and a TCAA Trowel of Excellence certified contractor



For any questions related to this project or Artisan, please contact Morgen Panning, 810-220-2370, morgenp@artisantileinc.com.



2022 TILE TRENDS

t's always exciting and refreshing to see what the new year brings in the way of trends, and 2022 does not disappoint. From plaster looks and jewel tones to organic textures and warm stones, this year's top tile trends are primed for all sorts of residential and commercial applications. These are the up-and-coming tile trends that will be on show in the Tile Council of North America (TCNA) pavilion at Coverings (Las Vegas, April 5-8) and will see growth in popularity in homes and businesses worldwide.

Plaster Looks

Due to the popularity of nature and earthy elements, textured wall treatments are having a resurgence. Most notable are the textural appearance and subtle color variations that replicate the artistic layering of plaster. Plaster-look tile brings an immediate warmth and richness to walls, as well as an artisanal touch. You can decide to further warm your plaster look or cool it down depending on the shade you choose. We see many neutral plaster-look tile designs mimicking the look of, well, real plaster. However, that doesn't mean you can't opt for a little color! Jeweltoned plaster looks have been popping up as well.

Color Trend: Earthy Jewel Tones

Following so much time spent indoors, people are gravitating toward earth tones with a desire to connect with nature. They're introducing more natural colors into the home and onto walls, floors, and



other surfaces. At the same time, many homeowners are looking to add a luxurious vibe to the spaces in which they spend so much time. Enter earthy jewel tones.

Jewel tones that you can find in nature amber, clay, brick, aquamarine, teal, and emerald — are popular on tile palettes for 2022. These earthy colors give us a grounded connection to the outdoors, while the saturated jewel tones add a regal quality.

Floor-to-Ceiling Marble Looks

Another trend bringing timeless luxury to new spaces is floor-to-ceiling marble looks. Defined by a sense of movement and grandeur, these tiles are full of exuberance, particularly when produced on floor-toceiling gauged porcelain panels. While white marble looks still reign supreme, manufacturers are producing more dramatic options with striking colors-greens, blues, deep reds and browns, even pastel onvx looks-and dramatic veining. Neutral or colored, these breathtaking panels create dramatic first impressions. The brightening and uplifting effects of white marble-look panels are magnified by the sheer size of these panels. We love the moody, dramatic vibe that XL black marble-look tile creates. too. These luxe looks are not only evocative



of nature at these scales, but they make us feel like we're within nature's embrace.

As large, thin tile slabs have become more available, a wide variety of innovative designs and applications have emerged. Thingauged porcelain tile panels can now be used over virtually any substrate, including swimming pool walls. Moreover, the same technology used to produce thin-gauged porcelain tile panels can be used to produce thick porcelain slabs, which are perfect for countertops. Plus, with the growing popularity of outdoor living spaces, 2 cm and thicker porcelain pavers and slabs present a unique solution for patios, walkways, driveways, and rooftop decks. Attendees can expect to see beautiful outdoor living spaces demonstrated by many of the tile manufacturers at Coverings this year.

Warm Stones

Stone looks are a great way to add natural ambiance and visual texture to a space, and with the general warming up of color palettes the past few years, it should only follow that stone looks are also heating up color-wise.

Shapes Scaled

As last year brought oversized hexagons, 2022 brings various, other oversized shapes, such as triangles, diamonds and parallelograms, as well as their counterparts: pocket-sized hexagons and polygons. Configured in eye-catching patterns, these



shapes of various scales offer a contemporary twist on a classic design element. They are the perfect complement to standard square and rectangular field tiles. Whether you go for triangle or trapezoid tile, pocket-sized or oversized, unique tile shapes offer the opportunity to put your personal touch to a space.

Organic Texture

Ceramic production has reached impressive levels of high-definition printing, which may be why surface design is the new frontier in tile. From large-scale 3D textures to low relief that adds depth and structure, manufacturers have invested heavily in new technologies this past year to create ceramic tiles that break through the third dimension. A departure from the angular geometric patterns and textures you've seen in the past, these newer designs look more organic, like they were created by hand or by natural disturbances (for instance, rippled by the wind or the rain). Large or small in scale, these artisanal textures can bring a sense of whimsy and approachability to even the most austere and luxurious aesthetics.

This is just a glimpse of the many tile designs that will be on display at Coverings next month when you will not only get a look at the newest tile designs, but you can also learn





how they're being used in new applications. While ceramic tile is still predominately used in floor and wall applications, there are tremendous market opportunities arising from the growing popularity of ceramic tile in countertop, facade, paving, deck, patio, and furniture applications. (Read more on these and other applications at whytile.com.) With standards already in place for thin-gauged porcelain tiles and tile panels/slabs (3.5 mm to 6.5 mm) and the first edition of the TCNA Handbook for Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs coming out this year, architects and designers have everything they need to design with these innovative products. Further, a product standard for thick (2 cm) porcelain pavers is being balloted now and is expected to be released soon. Tile standards and installation guidelines are available at TCNAtile.com.



aesthetic CONSIDERATIONS OF TILE

PART II

By Scott Conwell, FAIA, FCSI, CDT, LEED AP Director of Industry Development International Masonry Institute

n last quarter's technical column, we discussed how the appearance of a tile installation is partly dependent on the visual qualities of the tiles, which are established by the American National Standard Specification for Ceramic Tile (ANSI) A137.1. A tile's physical characteristics are quantifiable and measurable by this standard, setting a benchmark for the visual quality of the completed tile installation. ANSI also states limitations for facial defects and criteria for uniformity of color. shade. and texture. In this second part on aesthetic considerations. let's examine tile's dimensional stability and limitations for warpage and wedging applicable to mosaic, quarry, pressed floor, glazed wall, and porcelain tiles.

CALIBER RANGE

The appearance of a tile installation is affected by the dimensional stability of the tiles – in other words, how consistent the size is from tile to tile. Uniformly sized tiles can be installed with tighter grout joints, and tiles with greater dimensional variation require wider grout joints. It is also easier for installers to maintain alignment of grout joints and uniformity of grout joint width when the tiles are more dimensionally stable. ANSI A137.1 quantifies allowable dimensional variation as "caliber range." Caliber range is defined



Fig. 1. Caliber range of a tile is the allowable variation from its average facial dimensions.

as variation from average facial dimension of sample, tested per Standard Test Method for Facial Dimensions and Thickness of Flat, Rectangular Ceramic Wall and Floor Tile (ASTM C499). (See Figure 1).

Depending on the type, tiles may be classified into three sizing categories based on their caliber ranges:

> **Rectified tile** has the tightest tolerance. A rectified tile has had all edges mechanically finished in order to achieve a more precise facial dimension.

> **Calibrated tile** has the next tightest tolerance. A calibrated tile has been

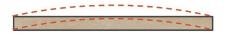


Fig. 2. ANSI A137.1 places limits on the allowable edge warpage and diagonal warpage of tiles.

sorted to meet a manufacturer's stated caliber range.

Natural tile is the least dimensionally stable. A natural tile is neither mechanically sized nor sorted.

According to ANSI A137.1, porcelain tile and glazed wall tile may be either rectified or calibrated; pressed floor tile may be either rectified, calibrated, or natural; and quarry tile and mosaic tile are not categorized.

Because pressed floor tile may be classified in any of the three sizing categories, let's look at the acceptable caliber range for each category of pressed floor tile using a tile of nominal 24-inch dimension as an example. Note that the actual dimension of 24 inches may vary by as much as 4%, and this value varies by manufacturer. In our example, we will use 23 7/8 inches as the actual size. The values below can be found in Table 8 of ANSI A137.1.

For rectified pressed floor tile greater than or equal to 6 inches, the allowable caliber range is $\pm 0.25\%$ or ± 0.03 inches (whichever is less). Therefore, a nominal 24-inch pressed floor tile that is rectified may vary ± 0.03 inches ($\pm 1/32$ inches). Thus, the actual dimension of 23 7/8 inches may be as small as 23 27/32 inches and as large as 23 29/32 inches.

For calibrated pressed floor tile greater than or equal to 6 inches, the allowable caliber range is $\pm 0.50\%$ or ± 0.08 inches (whichever is less). Therefore, a nominal 24-inch pressed floor tile that is calibrated may vary ± 0.08 inches ($\pm 5/64$



Fig. 3. Extreme warpage.

inches). Thus, the actual dimension of 23 7/8 inches may be as small as 23 51/64 inches and as large as 23 61/64 inches.

For natural pressed floor tile, the allowable caliber range is $\pm 0.75\%$ or ± 0.09 inches (whichever is less). Therefore, a nominal 24-inch pressed floor tile that is natural may vary ± 0.09 inches ($\pm 3/32$ inches). Thus, the actual dimension of 23 7/8 inches may be as small as 23 25/32 inches and as large as 23 31/32 inches.

Similar caliber ranges for mosaic, quarry, glazed wall, and porcelain tile can be found in Tables 6, 7, 9, and 10 of ANSI A137.1, respectively. By understanding acceptable caliber ranges, the design professional or end user can reasonably predict how the finished installation will appear with respect to grout joint width, uniformity, and alignment.

WARPAGE

Most consumers of tile expect a relatively flat installation, which assumes the substrate is flat and the actual tiles are flat. Tile installation standards have clearly defined tolerances for the required flatness of substrates, and tile material standards set forth maximum warpage criteria for tiles. (See Figures 2 and 3.) Tiles may be slightly warped from edge to opposite edge (edge warpage) or from corner to opposite corner (diagonal warpage). The test for measuring warpage is Standard Test Method for Measuring Warpage of Ceramic Tile (ASTM C485). Inherent warpage of tile can affect the installation's flatness, lippage between tiles, and any acceptable offset bonding patterns that may be used.

Like caliber ranges, the allowable warpage depends on the type of tile and the sizing category. As an example, we will again look at a pressed floor tile of a 24-inch nominal dimension (23 7/8 inches actual dimension). The values below can be found in Table 8 of ANSI A137.1.

For rectified pressed floor tile greater than or equal to 6 inches, the allowable edge warpage is $\pm 0.40\%$ or ± 0.05 inches (whichever is less); the allowable diagonal warpage is $\pm 0.40\%$ or ± 0.07 inches (whichever is less). Therefore, a nominal 24-inch pressed floor tile that is rectified may be "cupped" or warped in either direction as much as 0.05 inches (3/64 inches) from edge to edge, or as much as 0.07 inches (1/16 inches) diagonally.

For calibrated pressed floor tile greater than or equal to 6 inches, the allowable warpage is $\pm 0.50\%$ or ± 0.08 inches (whichever is less). Therefore, a nominal 24-inch pressed floor tile that is calibrated may be "cupped" or warped in either direction as much as 0.08 inches (5/64 inches) from edge to edge or diagonally.

For natural pressed floor tile, the allowable edge warpage is $\pm 1.00\%$ or ± 0.12 inches (whichever is less); the allowable diagonal warpage is $\pm 0.75\%$ or ± 0.13 inches (whichever is less). Therefore, a nominal 24-inch pressed floor tile that is natural



Fig. 4. Extreme wedging.

may be "cupped" or warped in either direction as much as 0.12 inches (1/8 inches) from edge to edge or as much as 0.13 inches (1/8 inches) diagonally.

Similar allowable warpage values for mosaic, quarry, glazed wall, and porcelain tile can be found in Tables 6, 7, 9, and 10 of ANSI A137.1, respectively. Armed with an understanding of acceptable tile warpage, the design professional or end user can reasonably predict how the finished installation will appear with respect to general flatness and lippage.

WEDGING

Tiles are normally pressed in dies with a true 90-degree angle construction. However, minor variations in die fill, compacting pressure, and heat treatment can result in finished tiles with acute and obtuse angles. (See Figures 4 and 5.) This out-of-squareness results in a difference in length of opposite sides, creating a tile with the appearance of a keystone or wedge. This difference in length is known as wedging. Excessive wedging can present challenges during installation. ANSI A137.1 sets maximum wedging criteria,

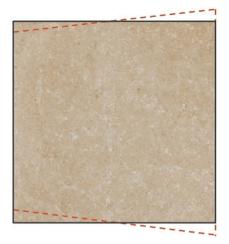


Fig. 5. Wedging tolerances address the allowable variations in length of opposite edges.

citing Standard Test Method for Wedging of Flat, Rectangular Ceramic Wall and Floor Tile (ASTM C502) as the test method.

To determine the allowable wedging, we will again look at the example of a pressed floor tile of 24-inch nominal dimension (23 7/8 inches actual dimension). The values below can be found in Table 8 of ANSI A137.1.

For rectified pressed floor tile greater than or equal to 6 inches, the allowable wedging is $\pm 0.25\%$ or ± 0.03 inches (whichever is less). Therefore, a nominal 24-inch pressed floor tile that is rectified may have opposite sides that vary by ± 0.03 inches ($\pm 1/32$ inches). Thus, the actual dimension of 23 7/8 inches may be as small as 23 27/32 inches on one side and as large as 23 29/32 inches on the opposite side.

For calibrated pressed floor tile greater or equal to 6 inches, the allowable wedging is $\pm 0.50\%$ or ± 0.08 inches (whichever is less). Therefore, a nominal 24-inch pressed floor tile that is calibrated may have opposite sides that vary by ± 0.08

inches (\pm 5/64 inches). Thus, the actual dimension of 23 7/8 inches may be as small as 23 51/64 inches on one side and as large as 23 61/64 inches on the opposite side.

For natural pressed floor tile, the allowable caliber range is $\pm 1.00\%$ or ± 0.12 inches (whichever is less). Therefore, a nominal 24-inch pressed floor tile that is natural may have opposite sides that vary by \pm 0.12 inches ($\pm 1/8$ inches). Thus, the actual dimension of 23 7/8 inches may be as small as 23 25/32 inches on one side and as large as 23 31/32 inches on the opposite side.

Similar values for allowable wedging of mosaic, quarry, glazed wall, and porcelain tile can be found in Tables 6, 7, 9, and 10 of ANSI A137.1, respectively. With an understanding of acceptable wedging, the design professional or consumer can reasonably predict how the finished installation will appear with respect to parallel lines in tiles and grout joints.

BEAUTY-IN THE EYE OF THE BEHOLDER?

The vast realm of ceramic tiles manufactured today express a variety of design motifs, from exacting, precise, and predictable to irregular, random, and surprising. Whatever the project's visual requirements, design professionals can rely on the established methods set forth in ANSI A137.1 for measuring and classifying the aesthetic attributes of tile. In the hands of an educated design professional and qualified tile installers, tile can achieve any design aesthetic.

HISTORY OF TILE

BATCHELDER: A Shared Legacy of Excellence

PART FIVE

A s we recall, **Ernest Batchelder** began making his hand-crafted tiles in his backyard garden in 1910, and within two years, he had established his operation on industrial property in Pasadena. What's unusual about Batchelder's tile to many today is the immediate public appeal of the rather dingy-looking ceramic product when it was first introduced.

As Batchelder's put it, "Our product is hand-wrought by processes developed in our own factory. The color is a mineral slip fired into the surface at high temperatures in such a way that it becomes an integral part of the body,



Batchelder tile, St. Frances Wood, San Francisco. Credit: Tile Heritage Digital Library.



Claycraft Potteries tile, Oakland, CA. Credit: Kevin Faughnan

presenting a surface texture free from gloss and with the mottled surface characteristic of Batchelder Tiles. It will be found that there are slight variations in shape and size. These variations are not sought; they are inevitable and desirable in a handmade tile."

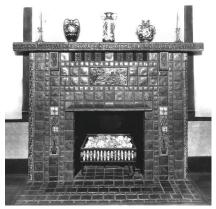
There were no other tiles like it at the time, and its appearance was compatible with the dark wooded interiors of Arts & Crafts homes. This was when residential building was running rampant, and every house needed a fireplace mantel. Serious competition was inevitable, but it took ten years to arrive.

Claycraft Potteries was founded in 1921, just two miles north of the new Batchelder-Wilson factory in Los Angeles. **Fred Robertson** (1869-1952), who came from a long line of Scottish ceramists, served as superintendent, and with his son, George, produced some of the most exquisite decorative tiles of the era. As their field tiles so closely resemble Batchelder's, identifying one from the other today is a challenge, nearly impossible were it not for the decorative inserts that are distinctly different. Rufus Keeler (1885-1934) was just out of high school when he got his first job at the Carnegie Brick and Pottery Company in Tesla (east of San Francisco), a company that was instrumental in the rebuilding of the Bay Area after the 1906 earthquake. Following the Carnegie Brick and Pottery Company, he worked as a draftsman at Gladding, McBean in Lincoln, California, from 1909 to 1916 and was eventually offered a job to close a tile operation in National City, Calofornia. Returning to the Los Angeles area in 1917, 32-years-old and married with two children, he started his own business: Southern California Clay Products Co. By the early 1920s, it was producing handcrafted fireplace mantels

James White Hislop (1860-1932), a third-generation clay crafter from Scotland, arrived in California in 1884 and immediately got work at Gladding, McBean where he rose to become both a foreman and superintendent. Leaving in 1901, he took high-level positions in four different clay potteries in the northern and southern regions of the state before settling in Richmond at age 61 to open



Southern California Clay Products Co. c. 1922 Credit: Tile Heritage Digital Library.



California Art Tile, Oakland, CA. 1925 Credit: Kevin Faughnan

the Clay Glow Tile Co. with his two sons. A year later in 1923, he changed the name to California Art Tile Company. To differentiate its products from others, the emphasis was put on their glaze palette— "tile with an afterglow."

Named William Flynn Muir (1886-1952) at his birth in Glasgow, Scotland, "Bill" apprenticed in the trade as a young man before immigrating to Canada with his family and then by himself to the United States, arriving in Fresno in 1913, where he formed Fresno Marble & Tile. Over the next 12 years, he had active accounts with both Batchelder and Claycraft, amassing a collection of both tiles as a hobby when he installed them. Inspired by these art tiles, he moved with his family to Oakland in 1925, founding Muresque Tiles. Muir himself managed business, hiring a production the crew and designers to develop a line of decoratives that featured romantic reflections of California's past.

In contrast, **Charles Albert Elsenius** (1883-1963) was born in Chicago and, as a brick mason, also set tiles after he moved to California in 1906 when he

Woolenius Tile Company, Oakland, CA. Credit: Kevin Faughnan



was 23-years-old. He became proficient at building out fireplace mantels and hearths, many of which required ceramic tiles. In 1927, he decided to make tiles at his home on Woolsey Street in Berkeley, combining his street name with his own to form Woolenius Tile Company. Producing tiles at home allowed Charles to price his work noticeably less than the other art tiles on the market. Not unlike the practices of the larger tile companies, he produced many decorative tiles that were almost indistinguishable from those of his more costly competitors.

From the late 1910s and throughout the 1920s, the time was ripe for American decorative tiles. Augmented by the

building boom, particularly in California, the tiles in fireplaces have left a legacy of extant installations, reflecting the sentiments of Ernest Batchelder: "A fireplace, in a peculiarly intimate sense, is the center of the home. It is the focal point in any scheme of decoration. In proportion, form, and color it demands thoughtful consideration."

Joseph A. Taylor President, Tile Heritage Foundation Cesery Award Recipient in 2003 www.tileheritage.org

All photography compliments of the Tile Heritage Foundation Digital Library unless indicated otherwise.



Muresque Tiles, Oakland, CA. Credit: Kevin Faughnan

PATTI SMITH-CONNELLY

JOINS PORTOBELLO AMERICA AS COMMERCIAL SALES MANAGER

by Terri Sparks, tas@communicatorsintl.com

ile industry veteran Patti Smith-Connelly has been appointed by Portobello America as the company's commercial sales manager. This announcement was made by Portobello Vice President of Sales Mike Ward, who stated, "We've known Patti for a long time. She embodies the professionalism we've been looking for. She knows the industry inside and out, is motivated and open-minded, and is already making progress on a national level."

Patti began her tile industry career over 25 years ago with Crossville Ceramics and has spent more than two decades in distribution. At Portobello America, not only is she directly calling upon A&D customers and prospects with and for the company's current distribution, but she is also working on national accounts.

"I couldn't be more excited," beamed Smith-Connelly. "This is the opportunity of a lifetime. First, our company is in the process of building a new factory (in Baxter, TN, slated to be operational during the first quarter of next year), which will be completely state-of-the-art in every possible aspect and will be producing a



Patti Smith-Connelly Commercial Sales Manager Portobello America

totally comprehensive line of both floor and wall tile that will be offered to the marketplace at excellent price points. Second, I'm thrilled to be working on a national level and look forward to building up new and long-term customer relationships for Portobello America."

Patti Smith-Connelly and the Portobello America team will be at Coverings 2022 at the Las Vegas Convention Center, April 5 – 8, at exhibit #N2526.

Portobello America, a Portobello Group company, designs, produces, and provides complete and competitively priced hard surface solutions focused on the US market. Portobello Group, or PBG S.A., is a publicly traded company, part of the Novo Mercado Bovespa since 2008 and was incorporated on December 22, 1977. Today, Portobello is one of the largest ceramic tile manufactures in the world.

To learn more, visit **www.portobelloamerica.com**.

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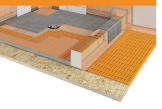


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