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TCNA BULLETIN

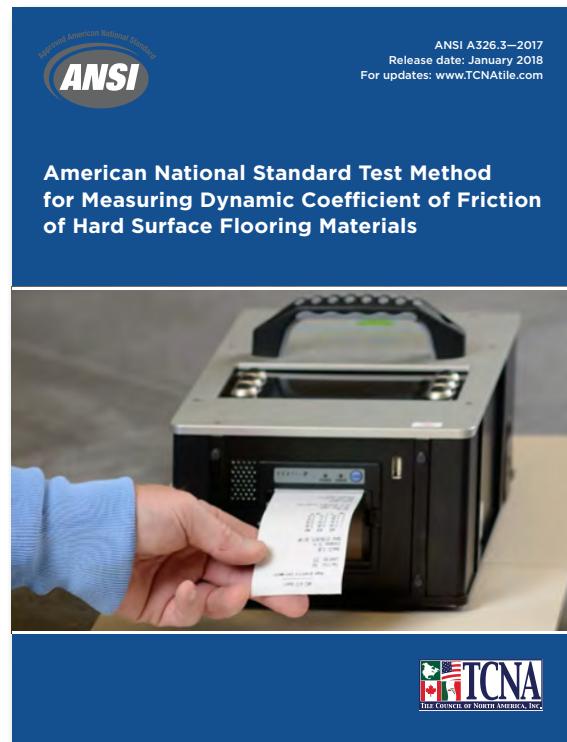
ANSI A326.3 UNIFIES MEASUREMENT OF SLIP RESISTANCE FOR HARD SURFACES

The standard for DCOF, ANSI A326.3, unifies the measurement of slip resistance for hard surface flooring materials.

Since 2012, the DCOF AcuTest® has been the ceramic tile industry standard for testing dynamic coefficient of friction (DCOF). The DCOF AcuTest® is the method used by the tile industry for assessing a floor's relative "slipperiness," whether in-situ after installation or during manufacturing. Although initially developed for ceramic tile floors and specified in ANSI 137.1¹ since 2012, the methodology has been equally applicable and useful with other hard surface flooring, where its use has been "gaining traction" every year.

With facility managers, inspectors, cleaning professionals, and forensic engineers using the method increasingly in the field, ANSI A326.3, *Test Method for Dynamic Coefficient of Friction of Hard Surface Flooring Materials*, was developed based on the DCOF AcuTest®.

Approved in March 2017 by a broad consensus of



hard surface flooring stakeholders, ANSI A326.3² incorporates the well-known method from ANSI A137.1 into a separate, stand-alone DCOF standard for hard surface flooring materials. A field testing section is provided for in-situ testing, including criteria and guidance for testing an installed floor under prevailing conditions, as would be the case when evaluating cleaning/maintenance procedures. Additionally, the field testing section addresses testing after cleaning, including the possible use of stronger cleaning agents than the cleaner referenced in the laboratory method. This evaluation is useful for testing the flooring surface after installation and use, without contaminants, to check for wear and to compare to the manufacturer's reported DCOF.

¹ ANSI A137.1 is the American National Standard Specification for Ceramic Tile

² As a simple mnemonic, 326.3 spells "DCOF" on a touchtone phone.

With the adoption of ANSI A326.3, the ANSI A137.1 and A137.2³ standards have been updated to reference ANSI A326.3 as the stand-alone DCOF test method.

Additional Guidance for the Specifier

The ANSI A137.1 specification released in 2012 included a minimum threshold of 0.42 for tiles intended to be walked upon when wet with water, and guidance to the specifier about important factors relevant to slip resistance. ANSI A326.3 has the same specification but additionally provides further guidance helpful for the specifier. Examples of the additional guidance given in ANSI A326.3 include:

- While specifying products with higher COF for use under contaminated conditions can be considered, surfaces with higher COF can lead to maintenance/cleanliness issues and hard to remove contaminants

³ ANSI A137.2 is the American National Standard Specification for Glass Tile.



and films, which can cause hazardous and unfavorable conditions. In addition to maintenance issues, a surface with a high COF can create a difficult walking condition for that subset of the elderly and disabled who slide their feet on the floor.

- Hard surface flooring materials with a wet DCOF less than 0.42 are often used in areas such as shopping malls (outside the food court), hotel lobbies, office buildings, etc. where appearance and ease of cleaning are highly desired and measures are in place to keep the floor dry when walked upon.
- Hard surface flooring materials that have a coating applied shall only be used in areas that can be kept dry, unless otherwise specified by the coating's manufacturer. If testing data is required after a coating is applied, use the test method specified by the manufacturer, or the dry testing procedure in ANSI A326.3 if no test method is suggested by the manufacturer of the coating.

The ANSI A326.3 standard identifies many factors that must be considered when determining the suitability of a hard surface flooring material for a particular



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ANSI A326.3 UNIFIES MEASUREMENT OF SLIP RESISTANCE FOR HARD SURFACES

application. For example, in exterior applications, the suitability of a flooring material depends significantly on drainage of the assembly, physical structure of the flooring material, expected footwear, intended use, and the variety of contaminants present, among many other factors. This is why a single DCOF limit value is not provided for exterior applications, interior ramps/inclines, and areas expected to be contaminated with something other than water.

Putting the Standard into Practice

Tile manufacturers already report DCOF according to ANSI A137.1/A326.3, with some including the information directly on packaging and others providing the information in their product literature. While the ANSI specification for ceramic tile does not require a minimum or maximum DCOF value independent of how the tile is used, reporting the value per the DCOF

AcuTest® is required. Other hard surface flooring industries are similarly following suit.

However, it is important to understand that DCOF is only one factor in determining the suitability of a flooring material for a particular application. As the standard correctly notes, there are many factors that can affect the possibility of a slip occurring, including by way of example, but not in limitation, the following: the material of the shoe sole and the degree of its wear; the presence and nature of surface contaminants; the speed and length of stride at the time of a slip; the physical and mental condition of the individual at the time of a slip; whether the floor is flat or inclined; how the hard surface flooring material is used and maintained; and the COF of the material, how the flooring surface is structured, and how drainage takes place if liquids are involved. Specifying flooring materials appropriately requires knowledge of how the space will be used





and maintained; often the better the communication regarding this early on, the better the flooring selections.

Considering slip resistance is especially important at entrances and exits where flooring can become unintentionally contaminated, for example, from water and soil tracked inside, or from fire-fighting efforts under emergency conditions. All building chokepoints deserve extra attention, as well as spots where water and other liquids can be anticipated, such as by drinking fountains, inside and around restrooms and kitchens, etc. Also, areas where the floor may be worn or polished deserve attention and periodic monitoring. Remedial treatments are always possible when DCOF monitoring indicates the need for such.

Above all, the easy measurement of in-situ flooring through the ANSI A326.3 method allows building owners/facility managers a means to monitor their spaces for essential flooring safety. Such monitoring, sometimes called DCOF auditing, can be used to keep maintenance providers accountable. After all, if a floor is not maintaining its intended DCOF value under actual use conditions, an accident can be anticipated. When floors are properly specified and maintained,

safer walkways result, benefitting all.

As a public service, the Tile Council of North America, publisher of the ANSI A326.3 standard, offers the standard without charge on the TCNA website, [TCNAtile.com/DCOF](https://www.tilecouncil.com/DCOF).



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ANSI A326.3

American National Standard Test Method for Measuring Dynamic Coefficient of Friction (DCOF) of Hard Surface Flooring Materials

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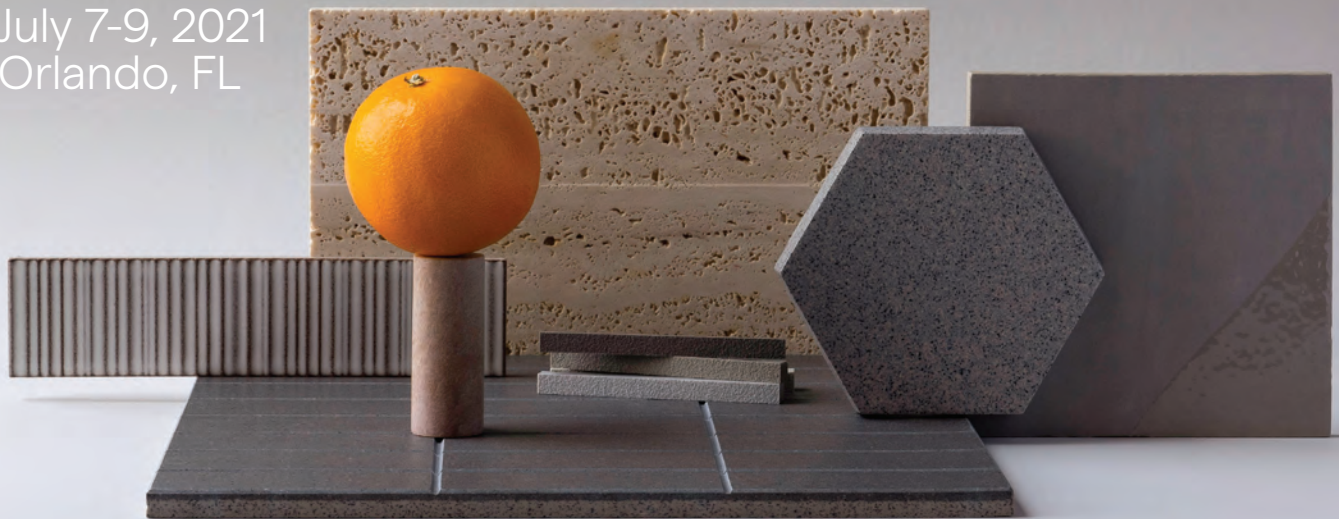
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NEW, MEASURABLE CODE CRITERIA FOR SLIP RESISTANT SURFACES AROUND POOLS, SPAS, AND HOT TUBS



In 2021, the Uniform Swimming Pool, Spa & Hot Tub Code (USPSHTC), published by the International Association of Plumbing and Mechanical Officials (IAPMO), established for the first time, measurable criteria for slip resistant surfaces around pools, spas, and hot tubs.

Introduction to the USPSHTC

According to IAPMO, the USPSHTC establishes “minimum requirements and standards for the protection of the public health, safety, and welfare.” It is relevant to “the design, construction or installation, repair or alterations of swimming pools, spas, and hot tubs,” and “is available for adoption and use by jurisdictions in the United States and Internationally. Its use within a governmental jurisdiction is accomplished through adoption by reference in accordance with applicable jurisdictional laws.” Prior to the publication of the 2021

edition, the USPSHTC did not include any quantitative threshold related to slip resistance, nor did it provide code officials, inspectors, specifiers, or other users with any criteria to appropriately assess walkway surfaces that are intended to be slip-resistant.

Changes to the USPSHTC

In the summer of 2019, a Slip-Resistance Task Group comprised of technical experts representing a variety of industries and fields was formed to draft recommended code revisions to standardize the specification of “slip-resistant” walkway surfaces and address the applicability of such surfaces in swimming pool, spa, and hot tub applications. The group, chaired by TCNA’s Director of Standards Development and Sustainability Initiatives, developed updates to the code language that were accepted by the IAPMO Technical Committee in 2020 and subsequently approved for inclusion in the 2021 USPSHTC.

The new USPSHTC criteria for slip-resistant walkway surfaces contain the following provisions:

1. A required wet dynamic coefficient of friction (DCOF) value of no less than 0.42, for level walkway surfaces intended to be walked upon when wet, as determined in accordance with the current ANSI A326.3 standardized test method.
2. A corrected minimum DCOF requirement for inclined/sloped walkways, which require greater available friction to prevent slipping.
3. For three-dimensionally patterned or profiled surfaces, testing shall be conducted on a nominally flat section (i.e., a non-profiled, non-patterned section) of such walkways. Where that is not possible, the specifier must provide documentation substantiating the product choice.

An appendix is also provided in the code with additional information regarding the determination of DCOF values for hard surface walkways intended to be slip-resistant.

Background on ANSI A326.3

Published in 2017, ANSI A326.3 is the *American National Standard Test Method for Measuring Dynamic Coefficient of Friction of Hard Surface Flooring Materials* that is now referenced by the 2021 USPSHTC. It was developed by the ANSI Accredited Standards Committee (ASC) A108, which includes 65 members representing a broad range of stakeholders across a variety of hard surface flooring industries.

A326.3 includes a standardized test method for the measurement of DCOF between a test foot and hard surface flooring under specified conditions; it can be performed in the laboratory and in the field. The standard defines a specified minimum threshold value of 0.42 for surfaces intended to be walked upon when wet with water, and additionally provides further guidance for specifiers throughout the standard.

Product choice substantiation where DCOF measurements are not possible

To meet the new code criteria for slip-resistant three-dimensional or textured surfaces where nominally flat sections are not present, and thus where specifiers must provide documentation substantiating their product choice, TCNA recommends the internationally-recognized DIN 51130 standard, commonly referred to as the “German Ramp,” as a means to characterize the slip resistance properties of such surfaces. The method requires that human subjects, wearing standardized footwear and a safety harness, walk on an increasingly inclined plane until a slip occurs. Products are classified



NEW, MEASURABLE CODE CRITERIA FOR SLIP RESISTANT SURFACES AROUND POOLS, SPAS, AND HOT TUBS



using “R” values, which are derived from the angle at which the operators slipped while conducting the test. These values are often utilized to assess product suitability for various applications, and they help illustrate a product’s slip resistance characteristics. In general, products with a higher R value, or where a steeper angle of slip occurs, will have a higher degree of slip resistance.

While an understanding of the application of DIN 51130 is helpful in characterizing product slip resistance, it is important to note that the method can only be conducted in laboratory settings; field testing is not possible. Also, as a reminder, the code states that product substantiation for three-dimensional and textured surfaces is only necessary when nominally flat sections of such surfaces are not present for A326.3 testing.

DIN 51130 Slip-resistance classification chart

| | |
|--------------------|-----|
| 6° up to 10° | R9 |
| Over 10° up to 19° | R10 |
| Over 19° up to 27° | R11 |
| Over 27° up to 35° | R12 |
| Over 35° | R13 |

Anticipated updates to ANSI A326.3

Currently, ASC A108 is developing updates to ANSI A326.3, including a product use classification system expected to be published in 2021. At the time of publishing this bulletin, this system has been proposed to address dry areas, two categories of interior wet areas, exterior areas, and areas exposed to oils/greases. Product classification is accomplished through reference to DCOF threshold values in ANSI A326.3 and/or manufacturer declarations. For the latter, manufacturing parameters, internal quality control criteria, and manufacturer experience with similar surfaces, form the basis for making such declarations, with manufacturers defining their internal product selection criteria. These criteria may include DCOF limit values established using ANSI A326.3 or other test methods, internal reference standards and practices, and/or the presence of abrasive grain and/or surface structure. The intent of the classification system is to facilitate increased communication between manufacturers, specifiers, designers, suppliers, and consumers regarding the types of areas where products can be appropriately installed and used, ultimately providing greater consumer protection.

Although this and possible future revisions to ANSI A326.3 are not automatically adopted into the 2021 USPSHTC, but rather will be considered in future code cycles, the product use classifications can be used for further product choice substantiation.

Going beyond the code . . . other important slip resistance factors

To further address the complicated issue of slip-resistance, it is important that specifiers are aware of many different factors not addressed by standardized product testing that will affect the slip resistance an individual experiences. Referencing ANSI A326.3:

“There are many factors that affect the possibility of a slip occurring on a surface, including, by way of

example, but not in limitation, the following: the material of the shoe sole and the degree of its wear; the presence and nature of surface contaminants; the speed and length of stride at the time of a slip; the physical and mental condition of the individual at the time of a slip; whether the floor is flat or inclined; how the hard surface flooring material is used and maintained; ... how the flooring surface is structured, and how drainage takes place if liquids are involved. Because many variables affect the risk of a slip occurring, the COF shall not be the only factor in determining the appropriateness of a hard surface flooring material for a particular application.”

Simply stated, understanding how a space will be used and maintained, in conjunction with the code criteria

in the 2021 USPSHTC and specifications contained in ANSI A326.3, allows the specifier to choose appropriate flooring for the intended use.

For more information on the code language on slip-resistant walkway surfaces, consult Section 314.0 of the USPSHTC 2021 edition on the IAPMO website.

For more information on the ANSI A326.3 standard, its publisher (TCNA) offers the standard free of charge on the TCNA website.

For parties interested in DIN 51130 “German Ramp” testing and ANSI A326.3 “DCOF” testing, please contact TCNA Product Performance Testing Laboratory, which offers both tests as part of its slip resistance testing services.



INTERNATIONAL BUILDING CODE (IBC) UPDATES REQUIREMENTS FOR EXTERIOR ADHERED PORCELAIN TILE

*Submitted by Scott Conwell,
International Masonry Institute*

For the first time since the introduction of porcelain tile to the International Building Code (IBC) in 2009, the newest edition of IBC published this year includes major changes to the requirements for exterior adhered porcelain tile. The new criteria for exterior tile were examined and developed by the International Masonry Institute (IMI), Tile Council of North America (TCNA), and manufacturers of tile and setting materials. Once consensus was reached, IMI and TCNA made a formal proposal to the International Code Council (ICC), publisher of the IBC, and testified at ICC's public hearing on the new code criteria. ICC unanimously approved the proposal and has implemented its language into the 2021 IBC. The updated requirements are in response to the increased availability of larger, thinner porcelain tiles, improved technologies in bonding mortar, and the tile industry's

focus on qualified labor. These new code requirements will allow safe and more liberal use of large format adhered porcelain tile on exterior walls and will create unprecedented opportunities to use ultra-large format tile on building exteriors. The updated section from the 2021 IBC reads as follows in its entirety:

1404.10.2 Exterior adhered masonry veneers—porcelain tile. Adhered units weighing more than 3.5 pounds per square foot (0.7 kN/m²) shall not exceed 48 inches (1219 mm) in any face dimension nor more than 9 square feet (0.8 m²) in total face area and shall not weigh more than 6 pounds per square foot (0.29 kN/m²). Adhered units weighing less than or equal to 3.5 pounds per square foot (0.17 kN/m²) shall not exceed 72 inches (1829 mm) in any face dimension nor more than 17.5 square feet (1.6 m²) in total face area. Porcelain tile shall be adhered to an approved backing system.



Code requirements from 2009 through 2018

In 2009, porcelain tiles meeting ANSI A137.1 *American National Standard Specifications for Ceramic Tile* were typically manufactured to a thickness of 9/32–7/16 in. (7–11 mm), and were adhered with mortar manufactured in compliance with ANSI A118.4 *American National Standard Specifications for Modified Dry-Set Cement Mortar*. Due to safety concerns and recommendations of the tile industry at that time, the IBC limited the size of these relatively thick and heavy tiles to a maximum of 24 in. (610 mm) in any dimension, and a maximum area of 3 ft² (0.28 m²) for any one tile. Moreover, the IBC imposed the restriction that any one tile shall not weigh more than 9 pounds per square foot (0.43 kN/m²). By today's standards these requirements seem overly restrictive, but they served the tile industry well in the last decade.

What factors have sparked the code changes?

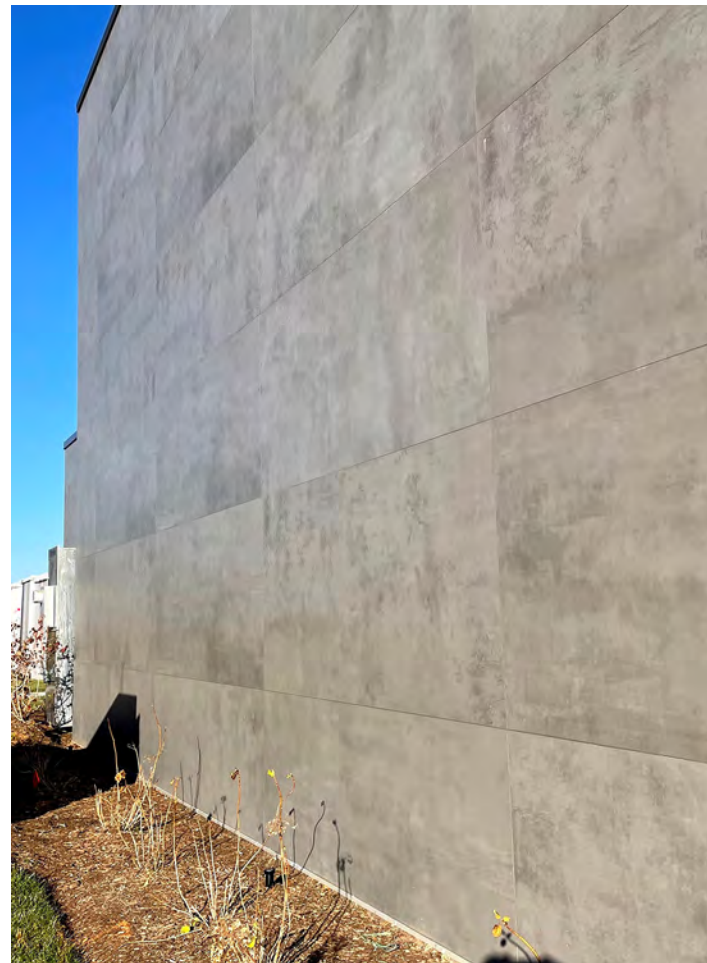
The past ten years have seen major developments in the tile industry leading to the safe use of larger adhered porcelain tiles: the advent of larger and thinner tiles, the development of stronger mortars, and the increased focus on installer training and certification programs.

Larger, thinner tiles

Manufacturers of porcelain tile in North America and worldwide now have the technology to produce tiles that are significantly thinner and larger than tile manufactured in previous decades. Porcelain tiles manufactured to ANSI A137.3 *American National Standard Specifications for Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs* are commonly 1/8–7/32 in. (3.5–5 mm) in thickness. Gauged porcelain tile (GPT) panels also frequently have facial dimensions nearly as large as 6 ft. x 12 ft. (1800 mm x 3600 mm in actual size). The thinner profile of these tiles results in units that remain relatively lightweight despite their ultra-large format.

Stronger mortar

Just as tile manufacturers were developing technology that would test the limits of tile size and thickness, setting material manufacturers were improving their products to provide more tenacious bond strength. ANSI A118.15 *American National Specifications for Improved Modified Dry-Set Cement Mortars* was approved as a new standard in 2014, establishing more rigid criteria for resistance to shear forces. For example, the required 28-day shear strength of mortar meeting ANSI A118.15, the standard recommended by most GPT panel manufacturers, is double the requirement for mortars meeting ANSI A118.4, at 400 psi (2.76 MPa) and 200 psi (1.38 MPa) respectively.



INTERNATIONAL BUILDING CODE (IBC) UPDATES REQUIREMENTS FOR EXTERIOR ADHERED PORCELAIN TILE



Industry's focus on qualified labor

Finally, even with these tremendous improvements in materials, the tile setters, finishers, and contractors installing them must be qualified. Trained, skilled craftworkers and contractors are paramount to the success of any tile project, and when the public's health, safety, and welfare are at stake, qualified labor is critical. The tile industry has made great strides in the last decade in expanding the delivery of longstanding programs like the apprenticeship and training program of the International Masonry Training and Education Foundation (IMTEF), which is the training arm of the IMI for union installers, and the Certified Tile Installer (CTI) program of the Ceramic Tile Education Foundation (CTEF) for union and non-union installers.

Further, the Tile Contractors' Association of America's (TCAA) Trowel of Excellence certification and the National Tile Contractor Association's (NTCA) Five Star certification establish credentials for best practice tile contractors. And for installers who aspire to be the most technically proficient in their field, the Advanced Certifications for Tile Installers (ACT) allow for installers to be assessed and certified in seven critical skill areas including the installation of large format tile (LFT) and GPT. Each of these qualified labor training and certification programs works closely with manufacturers of tile and setting materials to ensure that the skilled labor force is constantly kept up to date with the latest material and installation technologies.

The new code requirements in 2021

So how large a porcelain tile can now be adhered to a facade? To simplify the new code requirements, the criteria in the 2021 IBC may be summarized as follows:

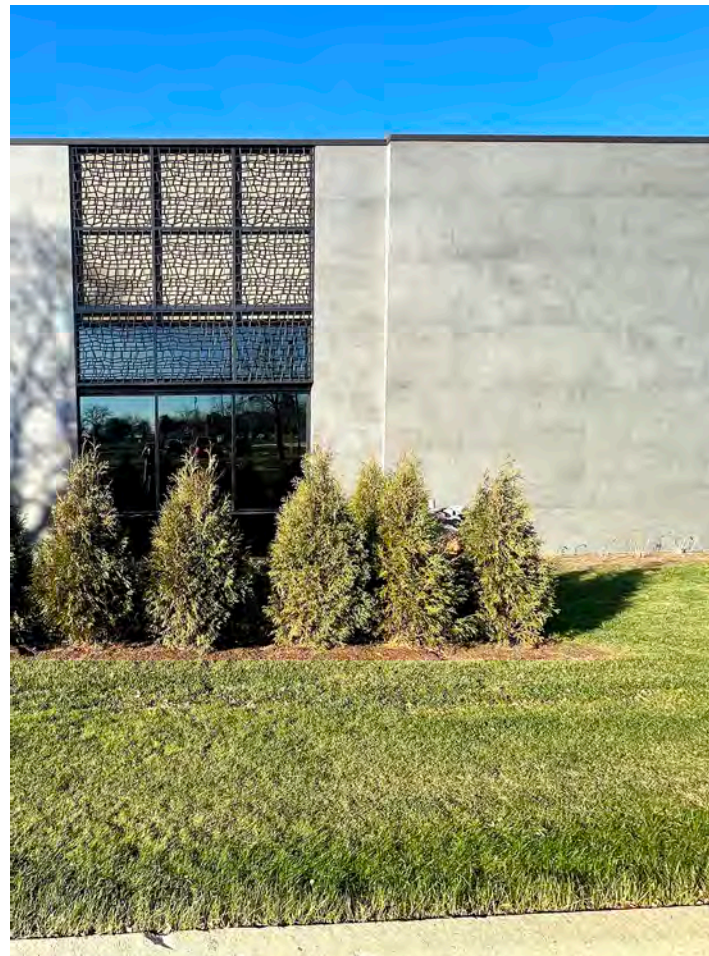
For tiles greater than 1/4 in. (6 mm) thick, the maximum tile size is 9 ft² (0.84 m²), which in common tile sizes is 36 x 36 in. (915 x 915 mm) or 24 x 48 in. (610 x 1220 mm). Tiles of this thickness may not have any face longer than 48 in. (1220 mm).

For tiles less than or equal to 1/4 in. (6 mm) thick, the maximum tile size is 17.5 ft² (1.6 m²), which translates to 48 x 48 in. (1220 x 1220 mm) or 36 x 72 in. nominally (900 x 1800 mm in actual size). Tiles of this thickness may not have any face longer than 72 in.

Finally, while this update applies to large and ultra-large format tiles, it is important to remember that ceramic and porcelain tiles in traditional sizes have always been and continue to be allowed under the IBC for exteriors. With this code change, a design professional or owner can now specify these larger size tiles without submitting any special requests to the local building code official. If a design professional or owner wishes to install tiles that exceed these requirements, it may still be possible to do so by applying for a code variance with the authority having jurisdiction.

What's next?

As states, provinces, and municipalities adopt the 2021 IBC, we encourage design professionals across North America to consider ceramic and porcelain tiles in all sizes for their benefits on exteriors as well as interiors. Their health benefits, durability, low maintenance, sustainability, and unlimited design aesthetics make ceramic and porcelain tiles the perfect choice for building facades, and it is now easier than ever to meet building code requirements and deliver a beautiful, healthy building.



Project: Perry's Steakhouse

Architect: Aria Group

General Contractor: International Construction Inc.

Tile Contractor: Ready Tile

Craftworkers: BAC Local 21 Illinois

Photo credits: International Masonry Institute

PORCELAIN TILE CERTIFICATION AND THE PORCELAIN TILE CERTIFICATION AGENCY (PTCA)

In 2007 Tile Council of North America (TCNA) partnered with the Ceramic Tile Distributors Association (CTDA) to create the Porcelain Tile Certification Agency (PTCA) to certify porcelain tile. This program was formed at the initiative of distributors and manufacturers who were concerned with the amount of tile being sold in the United States that was marked as porcelain but which was in fact not porcelain.

What is porcelain tile, and why does it matter whether a tile is porcelain?

As defined by the ANSI A137.1 ceramic tile standard, porcelain tile is a ceramic tile with a very low water absorption (0.5% or less), as tested per ASTM C373. Porcelain tile is denser and has a lower water absorption than other types of ceramic tile. When non-porcelain tiles are unknowingly substituted, freeze/thaw and expansion failures can result from unexpected moisture absorption.

Why was this porcelain tile certification program created?

It is well known that some non-porcelain tiles made



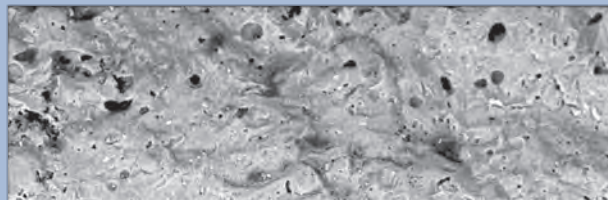
overseas are knowingly mislabeled as porcelain, with exporters and importers choosing to ignore the relevant North American standard (ANSI A137.1). While the criteria for porcelain tiles have been well-defined for several decades in North America, this practice of mislabeling tiles began when the term porcelain was undefined in international standards.

Today the term is well defined and the ISO and ASTM water absorption methods are harmonized, but historically the method used internationally for measuring water absorption (ISO) was less rigorous than the ASTM C373 method used in North America.

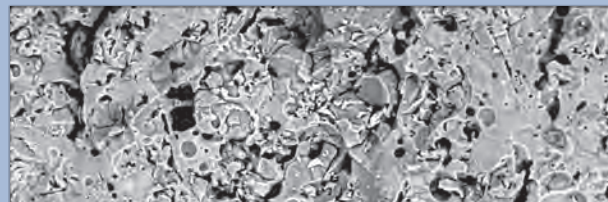
Simply stated, this means that some tiles classified as




0.39% water absorption



5-6% water absorption





Approximately 70% of the tiles sold in the United States are imported.

porcelain overseas haven't met the stricter and more demanding water absorption criteria used in North America. In freeze/thaw and wet environments, that can be important. Given that approximately 70% of the tiles sold in the United States are imported, PTCA certification was developed to protect the consumer from tiles either intentionally mislabeled or mislabeled due to differences in testing.

Through the PTCA program the need for porcelain certification has become even more evident, as 360 tile series failed as of November 2019.

Can only manufacturers sign up for PTCA certification?

No. The program is open to both manufacturers and sellers of porcelain tiles. Either can be a program participant.

PTCA certification: What does it mean?

Recognizing that the extent of this false labeling issue only applies to whether or not tiles meet the water absorption criteria of the ANSI A137.1

standard, PTCA certification was developed only to independently evaluate if the program participant understands North American water absorption criteria and can meet such. Tiles are not checked to see whether or not they meet all the other relevant properties for porcelain tiles in the ANSI A137.1 standard; variance from those properties has not been an issue in general, and the criteria are well understood. For each series being evaluated, five commercially available samples (selected by the participant) are sent once every three years by manufacturing participants and annually by non-manufacturing participants.

Passing the initial testing establishes that the participant understands and can meet North American water absorption criteria. For more details on the PTCA program, the PTCA Program Participation Agreement is publicly available and can be found at www.ptcaonline.org/PTCA_Participation_Agreement.pdf.

PORCELAIN TILE CERTIFICATION AND THE PORCELAIN TILE CERTIFICATION AGENCY (PTCA)

If a box of tiles has the PTCA certification mark on it, is PTCA stating that those tiles meet ANSI A137.1 water absorption criteria?

No. PTCA establishes that the program participant understands North American water absorption criteria and is able to meet such.

The quality of the tiles being sold is exclusively controlled by the actual manufacturer.

If a box of tiles has the PTCA certification mark on it, is the program participant stating that those tiles meet all ANSI A137.1 criteria?

While the program participant may independently claim compliance with all ANSI A137.1 porcelain tile criteria, that is not required by PTCA of program participants.

By participating in the PTCA certification program, the program participant (i.e., the manufacturer and/or seller) is stating that the tiles it produces or sells labeled with the PTCA mark meet the ANSI A137.1 porcelain tile water absorption requirements.

Non-manufacturing participants are further required to obtain a written assurance from the actual manufacturer that it will immediately notify the participant of any changes in the conforming porcelain tiles or any manufacturing variances that may affect the certification.

To further ensure the program's effectiveness, participants have agreed not to use the PTCA mark in any way misleading or confusing to buyers, including displaying the certification mark in a way that would imply non-certified products are certified. Participants also are not allowed to transfer use of the mark to any other person or entity.

As noted above, PTCA certification does not mean the tiles tested met all ANSI A137.1 or ISO 13006 criteria, which would require testing for other physical properties such as dimensions, warpage, breaking strength, etc. That assurance would need to come from the manufacturer or via a third-party lab.

If a box of tiles has the PTCA certification mark on it, can those tiles be used in freeze/thaw and wet environments without concern?

While the tiles may be perfectly appropriate for such use, the PTCA certification mark does not suggest that. The suitability of any tiles for specific applications requires an analysis of the project conditions by a qualified individual and proper installation. The certification mark does not assure fitness for any particular purpose.



What are the benefits of the PTCA program?

The PTCA program is designed to directly benefit consumers purchasing porcelain tiles and, indirectly, everyone involved in the supply chain.

Participants benefit by being able to independently confirm to customers that what they are producing or selling is truly porcelain, and by being able to differentiate their products from falsely-labeled porcelain products.

Producing porcelain tiles can be a more intensive and costly process than producing non-porcelain tiles, so certification is a good way for manufacturers and sellers to confirm that investment to the market.

For distributors PTCA certification helps differentiate real porcelain tiles from those that are falsely-labeled as porcelain.



Who polices PTCA-certified tile?

The marketplace does. If a question arises about whether a tile sold as PTCA-certified truly meets the water absorption criteria for porcelain tiles, PTCA is authorized to acquire further samples and test such for compliance. The board of PTCA then reviews the available data and relevant actions taken by the program participant to decide whether to withdraw PTCA certification and use of the mark.

Anyone who suspects a non-porcelain tile is being sold as PTCA-certified tile is encouraged to notify PTCA at 630-942-6588 or info@ptcaonline.org.



WHAT IS TRUE PORCELAIN?



The difference between real and false porcelain cannot be detected by eye.... Suppliers of falsely-labeled porcelain are defrauding the consumer and benefitting from the popularity and market value of genuine porcelain.

Porcelain tile has become increasingly popular over the past decade. The American National Standard Specifications for Ceramic Tile (ANSI A137.1) require tile to have a water absorption of 0.5% or less to be classified as porcelain when tested per ASTM C373.

Manufacturing tile that meets this standard—true porcelain—requires porcelain-grade clays and other unique raw materials, plus precision milling processes and kilns set to extremely high firing temperatures (2100°F to 2500°F). The required raw materials, energy, and manufacturing equipment needed to produce such low porosity, high density tile are why real porcelain is typically more expensive than non-porcelain tile.

The difference between real and false porcelain cannot be detected by eye—the only way to know is to have a laboratory verify the tile’s water absorption is 0.5% or less. Through its lab, Tile Council has identified 360 series that did not meet the PTCA water absorption criteria necessary to be certified as porcelain.

Suppliers of falsely-labeled porcelain are defrauding the consumer and benefitting from the popularity and market value of genuine porcelain. This is particularly true for imported tile, and considering that approximately 70 percent of the tile sold in the United States is imported, much of the “porcelain” being sold may be falsely-labeled.

ASTM C373 Water Absorption Test

For ceramic tile, water absorption refers to the maximum amount of water that a tile can be made to absorb. In the lab test ASTM C373, water is drawn into the deepest pores of the tile by a strong vacuum.

So, measuring water absorption can also be looked at as measuring available tile porosity—the more water that can be absorbed, the more porous (less dense) the tile.

STEP 1



Tile sample is dried in an oven to ensure accurate dry weight.

STEP 2



Dried tile sample is weighed using a digital scale accurate to 0.001 gram.

STEP 3



Water is drawn into the tile sample by a vacuum and soaking it.

STEP 4



Saturated tile sample is weighed to determine the amount of weight gain due to absorption of water.

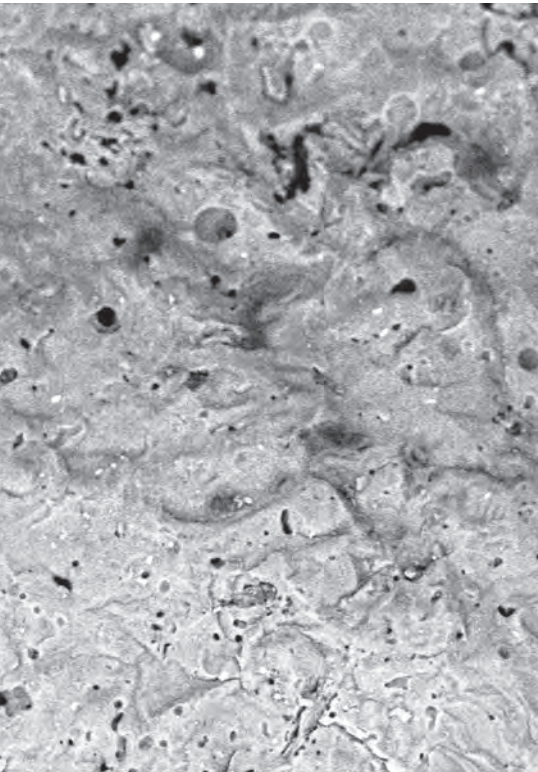
STEP 5



Water absorption is calculated. The change in weight is expressed as the percentage of the tile’s dry weight.

BE SURE.

The Certified Porcelain Tile logo means the tile tested met the requirement of 0.5% or less water absorption for porcelain tile of the American National Standards Institute's A137.1 standard.



PRODUCT PERFORMANCE TESTING LABORATORY

Visit www.TCNAtile.com for more information

WHEN QUALITY IS THE BOTTOM LINE MATCH ACT-CERTIFIED INSTALLERS TO THE JOB AT HAND



Tile setting has become a more and more specialized trade, yet it remains largely unregulated when it comes to requirements for installers, whether for training or for proven adherence to best practices and industry standards. The easy entry into tile setting means a contractor may have seasoned, skilled craftworkers or untrained installers with little experience under their belts. And, without an established skills baseline, the contractors that don't invest in installer training and education have a competitive edge, if the only consideration for choosing from a pool of tile contractors is which one has submitted the lowest bid, the norm for the vast majority of commercial work today.

This is the system for awarding tile jobs—too often to unqualified companies—that ACT (Advanced Certifications for Tile Installers) seeks to improve by establishing a skills baseline that allows consumers to compare costs and qualifications.

Launched in 2014, ACT is a program of written and hands-on testing for defined skill sets, like large format tile installation. While other training and certification



Construction and building design professionals are encouraged to integrate installer qualifications as requirements for bidding contractors, under “quality assurance” sections of their specs.

Requiring evidence of program completion or certifications under “submittals” is also recommended to help ensure the specified requirements for installers are met.

For ready-to-use boilerplate spec language, see the Installer and Contractor Qualifications Guide in the TCNA Handbook, or, for easy copy and paste, visit TCNAtile.com.

programs are available to tile installers, ACT has garnered wide support from the tile industry because it is standards-based and highly demanding.

ACT tests are not show-up-for-a-demonstration-and-get-your-certificate events. A percentage of installers fail, which differentiates ACT as a meaningful certification, not an educational session. The tests have strictly enforced time limits, and installers' hands-on work is evaluated and scored in-person, by approved evaluators only. Upon completion of the hands-on component by the installer, the evaluator literally tears it apart. By prying up tiles and probing fresh mortar beds, ACT evaluators judge what's below the surface, a crucial component of the program, as so much of what is required for a successful tile installation lies below the finished tile work.

ACT tests are administered by the Ceramic Tile Education Foundation (CTEF) and the International Masonry Institute (IMI), which collaborated to develop the program, with support from product manufacturers and industry organizations including the National Tile Contractors Association (NTCA), Tile Contractors Association of America (TCAA), Tile Council of North America (TCNA), and the International Union of Bricklayers and Allied Craftworkers (IUBAC).



ACT Certification: GROUTS

Specify **ACT GROUTS certification** on every job where cementitious grout, epoxy grout, or modified epoxy emulsion grout will be used.

Critical Installation Skills Tested: Proper mixing, installation, and curing of cementitious grout, epoxy grout, and modified epoxy emulsion grout



ACT Certification: LARGE FORMAT TILE /SUBSTRATE PREP

Specify **ACT LARGE FORMAT TILE certification** when tile larger than 15" long will be installed by a thin-bed method.

Critical Installation Skills Tested: Flattening a substrate to receive large tile and installing large tile within industry tolerances for coverage, flatness, and lippage



ACT Certification: MEMBRANES

Specify **ACT MEMBRANES certification** when a sheet or liquid membrane will be used for waterproofing or crack isolation.

Critical Installation Skills Tested: Application of sheet and liquid membranes with emphasis on avoiding installation errors that affect waterproofness



ACT Certification: SHOWERS

Specify **ACT SHOWERS certification** when designing showers with a mortar bed and tile floor over a shower-pan membrane.

Critical Installation Skills Tested: Creating a watertight (leak-proof) shower base that effectively evacuates water



ACT Certification: MUD WALLS

Specify **ACT MUD WALLS certification** when a mortar bed has been selected as the substrate for tiling walls.

Critical Installation Skills Tested: Installing wall mud to ANSI standards, with emphasis on proper materials and precision of finished work (flat, plumb, level, square)



ACT Certification: MUD FLOORS

Specify **ACT MUD FLOORS certification** when a mortar bed has been selected as the substrate for tiling floors.

Critical Installation Skills Tested: Installing floor mud to ANSI standards, with emphasis on proper materials and precision of finished work (flat, level)

TCNA BULLETIN

CHOOSING YOUR TILE CONTRACTOR



TILE. It's the go-to finish when you're looking for high fashion and high function. But you might not get either if you leave it to just anyone to install. Unlike plumbing, electrical, and structural masonry trades, tile installers and the tile contractors that employ them are not generally required to meet minimum trade craft criteria to be in business.

The difference between trained, experienced installers and inexperienced installers is noticeably reflected in their work, and the difference between a quality contractor and a deficient one is reflected in their service and business operations.

Together, contractor and installer transform your concept into reality. Whether you're a design/build professional selecting tile contractors on a regular basis or a homeowner with a single tile project, it's just not possible to overestimate the importance of finding qualified contractors and installers.

The Reputable Tile Contractor

- ✓ **Operates a legitimate business**, with responsible business practices and a policy of standing behind their work.
- ✓ **Invests in continuing education** necessary to stay up-to-date on current building codes, regulations, standards, and best practices. On-the-job training is the most popular way to learn a construction trade, but formalized training is a must for ensuring correct installation methods are being taught to and used by installers on your project.
- ✓ **Carries all required business licenses and insurances**, and doesn't push liabilities for property damages or worker injuries onto others.
- ✓ **Does not misclassify workers** to avoid paying into social security, unemployment, workers' compensation, and other employee programs.
- ✓ **Has a traceable business location** so customers can be sure post-installation questions and issues are addressed and resolved.
- ✓ **Has a track record for quality and service:** Good contractors can easily produce references and verifiable documentation of their commitment to quality and service.

Architects and Specifiers

Include language in job specifications requiring qualified labor and enforce it with the GC. See the TCNA Handbook for a list of industry recognized prequalification programs for installers and contractors such as the CTEF Certified Tile Installer Program, the ACT (Advanced Certifications for Tile Installers) Program, the NTCA 5-Star Contractor Program, and the TCAA Trowel of Excellence Program.

General Contractors

Deliver a quality tile installation by fulfilling contractor qualification requirements in job specifications. When not included, utilize internally developed qualifications. Require proof of qualifications to be included with all project bids. Thoroughly compare estimates from bidding contractors before awarding contracts. Often, higher estimates reflect better materials and additional necessary components and tasks, like substrate preparation and movement joints.

Homeowners

Don't hesitate to ask contractors for proof of insurance, their license (where required), and their installation qualifications. Thoroughly interview bidding contractors and check several references. Utilize consumer resources available from your state on the internet and from the Ceramic Tile Education Foundation.



Call CTEF at 864-222-2131 or visit CeramicTileFoundation.org for assistance finding or specifying a quality contractor.



“Because tile is a permanent finish, the lowest bid should not be the driving factor, but rather who is the most qualified to perform the scope of the work specified.”

— TCNA Handbook



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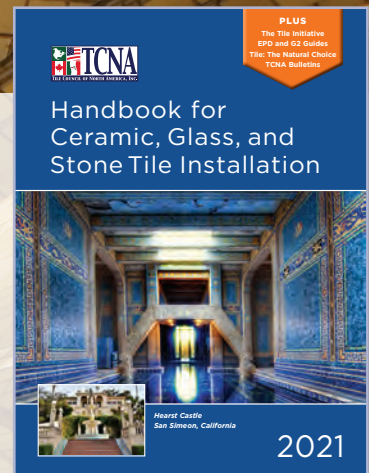
ENDURING DESIGNS NEED SOLID FOUNDATIONS



ANSI A137
product performance—
ceramic and glass tile



ANSI A108, A118, A136
installation and
workmanship; product
performance—mortars,
grouts, and membranes



TCNA Handbook
installation systems—
ceramic, glass, and
stone tile

START WITH STANDARDS

Now available in digital or print editions at www.TCNAtile.com



Guastavino tile circa 1909, Bridgemarket, New York City
Photo: Michael Freeman



Product Performance Testing Laboratory

Antiviral, Microbiology & Cell Culture Services

Long after the pandemic is over, a heightened call for hygiene will remain.

The **TCNA Product Performance Testing Laboratory** has a long history of microbiological testing and research, including ground-breaking research on photocatalytic antimicrobial surfaces and the antimicrobial effects of various metal oxides in glazes.

Additionally, the lab offers tests to evaluate the survival of different viruses (including **SARS-CoV-2**) on surface materials, the efficacy of common household cleaners to disinfect these surfaces, and the antiviral efficacy of products with antimicrobial coatings against different types of viruses.

Contact testing@TCNATile.com, or call **864-646-8453**, to test your products for hygienic advantages.

Viruses available for testing*

SARS-CoV-2 - NOW AVAILABLE

Adenoviruses

Hepatitis B

Hepatitis C

Norovirus

Influenza H1N1 Human

MSQ bacteriophage (viral screening tool)

* Additional viruses available upon request

CERAMIC TILE TESTING AND RESEARCH IN A PANDEMIC WORLD

Throughout the COVID-19 pandemic, the words “unprecedented” and “new normal” have been used more than anyone could have imagined. It should come as no surprise that the TCNA Product Performance Testing Laboratory has experienced a significant shift in daily testing and the types of testing and research inquiries received. The TCNA lab, historically focused on testing and research toward the development of standards and technical advancement of the tile industry, has expanded over the years to become a trusted source for third party product performance testing of tile, related installation materials, and many other products used in construction. For over 10 years, the lab has also performed microbiological testing and research, including ground-breaking research on photocatalytic antimicrobial surfaces and the antimicrobial effects of various metal oxides in glazes.

Pandemic-driven demands have called for more microbiological information about surfaces with which building occupants regularly come into contact. Because of the lab’s extensive experience, microbiological and antimicrobial testing capabilities, and expertise testing a variety of surfaces and products, TCNA’s lab is uniquely positioned to provide state-of-the-art research and testing on materials used in public and residential spaces to meet these new, critical needs.



As the lab focuses more attention on antiviral testing, such testing will contribute to the race to protect individuals against contracting and/or spreading viruses from contaminated interior surfaces. This data can also form a basis for reference when specifying interior products—a heightened consideration that will prevail long after the pandemic has subsided.

Bridging the Disconnect between Construction Experts and Testing Experts

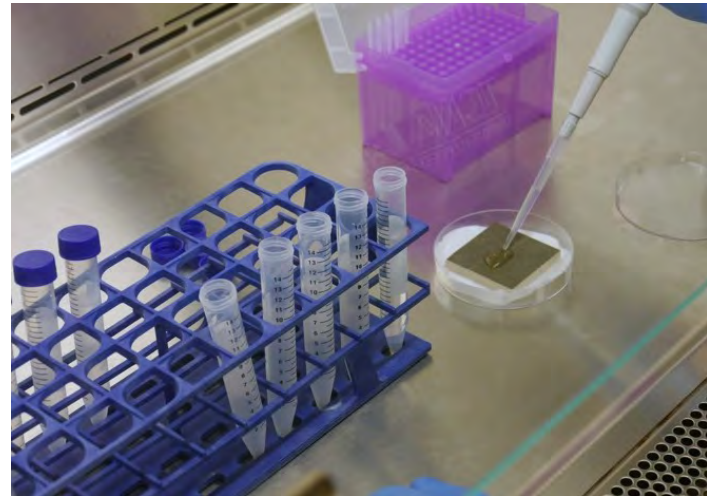
Prior to COVID-19, there was a disconnect between building construction experts and microbiologists. This disconnect is now being bridged through work at TCNA and by those companies bringing antimicrobial solutions to the market. The TCNA Product Performance Testing Laboratory is the only laboratory in the U.S. specializing in microbiological testing of floor, wall, and countertop surfaces. In 2020, the lab expanded testing to serve a broader spectrum of materials, such as sanitaryware, textiles, plastic films, copper composites, transportation interiors, food prep areas, disinfectants, and cleaning agents.



Increased testing through the TCNA lab has provided information about virus survivability on various surfaces, an area where there was previously very little information. There is currently a lack of standards for evaluating the efficacy of antiviral surfaces and agents and virus survival rates on surfaces. The work being done at TCNA is leading the development of internationally recognized test methods to standardize this type of testing as emphasis grows on the importance of antimicrobial properties.

Encouraging Product-Specific Discoveries

Thanks to increased testing, information is actively being collected and communicated but there is still a great deal of work to be done. There is encouraging news in some of the product-specific insights discovered in the lab thus far. As examples: There are certain antimicrobial coatings and various glaze ingredients that can be effective against the survival of SARS-CoV-2. Copper additives can also be effective, although oxidation on any metals can be a concern.



The TCNA lab continues to evaluate the duration of virus survival on ceramics and other non-porous surfaces. Additionally, the lab is studying the antimicrobial performance of porous surfaces, including treated/non-treated textiles and plastics.

The COVID-19 pandemic has changed how people look at the spaces around them; consumers and designers are seeking hygienic finishes and furnishings. Public health will be at the forefront of our world for the foreseeable future and products will continue to be developed to meet specific needs. The call for antimicrobial testing will continue to grow as standards evolve. Ongoing microbiological work at TCNA's lab provides necessary insights into the performance of finishes and furnishings, information that will prove beneficial to building occupants for many years to come.



Tile Heritage Foundation: Guardian of American Tile History



Tile Heritage Foundation was established in 1987 as a member supported, not-for-profit organization whose sole purpose is to protect and preserve the history of the American Tile Industry.

Tile Heritage is dedicated to promoting an awareness and appreciation of ceramic surfaces in the United States.

The Foundation is a repository, an archive, which embraces all aspects of the industry from its inception in the 1870s through to the present time, validating its significance for posterity.

The Foundation's archives include an estimated 40,000 documents and an equal number of images, both historic and contemporary. Manufacturing, distribution and installation history are represented.

The body of information on hand, coupled with expertise resulting from over 70 years of combined experience in the field and access to a network of experts worldwide, provides assurance of both helpful and accurate answers to questions and solutions to problems.



Above, Ross Purdy scrapes away excess clay from a tile mold at Orton Hall, OSU (1903). Photo courtesy of the Ohio State University archives. At left, a patented process for manufacturing mosaics (No. 537703 dated Apr. 16, 1895) provided Mosaic Tile Co. with a potential means of competing with its neighbor, American Encaustic Tiling Co., by making multilayered or multicolored tiles faster and less expensively.

Unless otherwise specified, all imagery courtesy of the Tile Heritage Digital Library.

Manufacturing represents the cornerstone of the tile industry.



Mosaic Tile Company, Zanesville, Ohio, circa 1910

After seven years modeling for American Encaustic, Herman Mueller along with his fellow ceramist Karl Langenbeck left in 1894 to establish the Mosaic Tile Company, also in Zanesville. Within a year, in April of 1895, Mueller was granted a patent for the “Process of and Apparatus for Manufacturing Mosaics,” an encaustic tile that imitated fine mosaics.

Although Mueller referred to the tile as “mosaic,” the decorative patterns were executed in small tesserae shapes of clay one-eighth inch square that extended through the clay body. Along with a series of individual motifs, large mosaic murals were produced like the pictorial mural at the Moerlin Bottling Department in Cincinnati, the facade of St. Nicholas Catholic Church in Zanesville, the “Eureka” panels throughout the main floor of the California State Capitol Building in Sacramento (replaced in recent years with Heath tile), and the “Presidential Seal” in the center of the floor at the National Building Museum in Washington DC (see previous page).



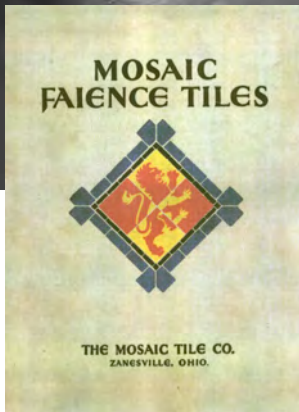
Tympanum, St. Nicholas Catholic Church, 925 E. Main St., Zanesville.



Herman C. Mueller, circa 1890

The primary goal of the Tile Heritage Foundation is to assist in the preservation of ceramic surfaces, which includes its legendary history, significant installations, as well as the objects themselves. By providing pertinent information, unbiased consultation and specific recommendations when needed, the Foundation serves both the industry and the public at large as no other agency can.

Marketing, sales, and distribution have served as an essential realm within the tile industry since tiles were first made to sell.



Tile showroom of J. A. Finn Co., 31 Madison Ave., New York City, exclusively featuring Mosaic Tile Company's products, circa 1930. Designed by Paul A. Faire. Tile Contractor: M. F. Welch.

During the last half of the 1920s and into the 1930s a number of tile manufacturers provided exclusive representation to independent showrooms to sell their products sometimes in addition to hosting showrooms themselves. There were competitive advantages for tile companies to do so. No doubt, Mosaic Tile was well aware of their Zanesville rival, American Encaustic, bankrolling its exotic and successful showroom in Manhattan just ten blocks to the north. Photos gift of Julie Mackall, Gilbertson Collection.



Office of J. A. Finn Co. immediately adjacent to the showroom.

Honoring the work and artistry of tile installers through the archiving of their accomplishments validates tiles for posterity.

Robert Howden, without question a “self-made man,” chose tile setting for what became an illustrious career. Born in Scotland in 1863, the youngest of eleven children, he worked half time in the woolen mills from age 9, leaving school entirely at 13 to work full time. During this time he worked in six different mills while attending seven different schools!



Robert with two of his three grandchildren, Ed and Betty, broke ground for the Howden Building in 1925.


Despite his losses business was booming during the reconstruction period following the quake. By the time Robert was breaking ground for the Howden Building at 17th and Webster, in his own words: “I had made the name Robert Howden a household word”!

Note: The original tile showroom in the Howden Building remains virtually intact today, featuring Batchelder, Claycraft and Solon & Schemmel tiles as well as housing a popular cafe.



The Howden Building at 17th and Webster Streets in Oakland, CA.

In 1882 at age 19 Robert immigrated to the U.S. settling in Minneapolis and took a job as a helper in a mantel and tile business; a year later he became a “full-fledged” (his word) setter. He married in 1887 and soon moved to Tacoma before discovering the Bay Area on his return from the Chicago World’s Fair in 1893. Oakland became his home where he rented a store, fitted up a display in front, and lived in the rear with his wife and three children. Soon he bought a house and moved with his family there. Next he purchased property for cash and built a 2-story brick building for his tile business, completing the work just three months before the 1906 earthquake.



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ROBERT HOWDEN & SONS

*Reception Room of Robert Howden & Sons
Tiles for Interior and Exterior*

Identification encourages both maintenance and restoration of historic tile installations.



Homeowner in Dallas, Texas was told that his 1926 fireplace was from the Rookwood Pottery. Could it be true? No, the tiles were produced by California Clay Products Co., popularly known as “Calco,” located in South Gate, California and referred to as “Mayan Art” in the company’s 1930 catalog.



The Tile Heritage Foundation offers tile identification services to the public at no charge. Simply email foundation@tileheritage.org with clear, low res images of individual tiles or tile installations along with whatever relevant information is readily available: site (city/state), size, date (approximate), architect/designer if known. If the experts at Tile Heritage are not able to identify the work, your email will be forwarded to others who are likely to know.

The archives held by THF are of national importance—they tell our story. We are all part of this heritage!



The owner of this early 1920s Tudor Revival home in Birmingham, Alabama suspected that her tiles were Batchelder’s but needed confirmation. She contacted Tile Heritage to find out and received the cleaning recommendations she asked for along with the verification of her suspicions.

Preservation of significant installations is of paramount importance.



Original ceramic tile mural (11' x 45') designed and produced by Guillermo Wagner Granizo for the City of Monterey for the façade of the city's Conference Center.

In 1983 the City of Monterey (California) commissioned Guillermo Wagner Granizo to design a tile mural (11' x 45') depicting the history of this coastal community for the exterior of the city's Conference Center. The city, needing to renovate the Center, made the decision to have the mural removed in 2015, all 633 pieces of 9" x 12" tile. The arduous task was awarded to Architectural Resources Group in San Francisco. In the process sixty-five of the tiles were broken, most in multiple pieces.

Imagine the care involved in just securing each of the tiny pieces, keeping the pieces for each broken tile separate, reconfiguring what goes where once back in the studio, and finally the skill involved in adhering the pieces together and masking the repairs! The mural was successfully reinstalled at the Center by C. L. Frost Inc. in November 2018.



Pietro "Pete" Ferrante (1867-1954), considered by many the "father" of sardine fisheries in Monterey Bay, inspired the success of the canning industry on Cannery Row.



The restored and re-installed historic ceramic tile mural (11' x 45') designed and produced by Guillermo Wagner Granizo for the City of Monterey Conference Center. Photo courtesy of Ron Wagner.

To be most effective, education necessitates direct “hands-on” communication.

Between 1991 and 2005 Tile Heritage presented annual symposiums in different cities around the United States, partnering with local organizations, to bring like minds together and to raise a community’s consciousness about the significance of local tile installations within these diverse venues. The program, most often 4-5 days, included workshops, tours and lectures on both historic and contemporary tile-related subjects.



Tile contractor demonstrates the proper use of a trowel.

Publishing is central to the Foundation’s outreach. Between 1988 and 2003 Tile Heritage published 42 issues of “Flash Point” (ISSN 1078-5647). Since 2004 “E-News” and “Shards & Snippets” have served as the Foundation’s principal means of communication. Since 2016 THF has resumed the annual publication of *Tile Heritage: A Review of American Tile History* (ISSN 1978-5655) featuring articles by the leading tile historians in America.



From their earliest age children have a natural attraction to soft clay.

Communicate is what we do!

Email provides our principal means of communication today, both from the office and when we’re “on the road,” responding to the daily inquiries from throughout the United States.



Adults too find clay irresistible!

Photos on this page courtesy of Carter Sietsema Photography .

Workshops hosted or attended by Tile Heritage augment the educational objectives of the Foundation.



Internationally recognized architectural ceramists present a workshop in Seattle.



Tile Heritage joins with others for a week “playing” with mosaics at “Heaven on Earth” in Todos Santos on the Baja Peninsula, Mexico.



A mosaic workshop in Davis, California (left) resulted in four decorative tile pillars supporting a palapa in Palm Desert, California.



“Keeping the Craft Alive,” an integral part of the Foundation’s mission, brings the importance of tile’s heritage into studios throughout the United States and beyond.

The library at Tile Heritage contains file folders on over 700 contemporary tile artists and artisans in the U.S., the folders representing only those who have sent their information to the Foundation with intention. No doubt there are hundreds of additional studios in the country whose work is currently not represented. Since the Foundation’s inception in 1987, there has evolved a sense of community that assists in keeping the craft alive.



Preparing a custom job in Park City, Utah.



Sculpting clay for a commercial project in San Diego.



Visiting a manufacturer’s showroom in Portland, OR.



Applying glaze to a lofted mural in Torrance, California.



Removing excess clay from a molded tile in Milanville, PA.

Tile Heritage tours to Europe provide opportunities once we return with new friends and broader perspectives.



Leaving the Jackfield Tile Museum at Ironbridge Gorge (above), the tour group gathers in Nottingham (left).



First stop in the Netherlands is the tile museum in Otterlo followed by a tour and demonstrations at the Makkum Tile Factory where traditional Dutch tiles are produced (right).



After the better part of a day at the tile museum in Lisbon (right), this group enjoys the spectacular display of Rococo *azulejaria* throughout the gardens at *Quinta dos Azulejos* in Lumiar, resting upon the benches in the semicircular pergola.



The Foundation is now engaged in maintaining the industry’s history as a living archive through a publicly accessible Finding-aid Index.



Tile Heritage Foundation’s archived tile collections, available by appointment.

“Where art and architecture meld and merge in the world of tile, Tile Heritage Foundation is there, preserving and documenting to educate the future of our industry.”

**Eric Astrachan
Tile Council of North America**

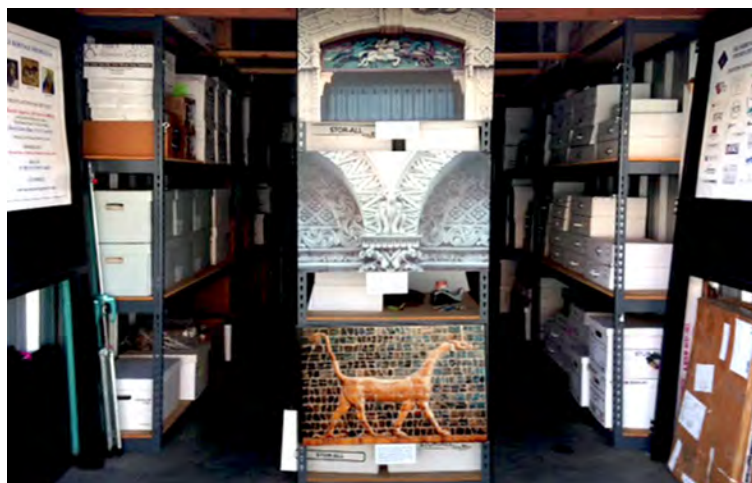
The Foundation's tile collection alone contains over 4000 different glazed and decorative samples from scores of American companies dating to the late 19th century. All of the tiles in the collection have been donated; Tile Heritage does not buy or sell historic material.

The present time is of critical importance as we strive to enhance the accessibility of the Tile Heritage archives and collections for industry-wide and public use. Our goal is to keep the archives “alive” with our ongoing development of the online Finding-aid Index. It is imperative that this work be completed. Expanding our industry partnership is essential to its success.

The Tile Heritage Library contains hundreds of books and over 40,000 documents. The collections include over 700 original company catalogs and more than 90 tile-related periodicals dating back to the 1880s.

“Tile Heritage represents the ‘soul’ of the industry in America.”

Donato Grosser



Tile Heritage Foundation’s archived periodical collections.

A broad funding base is essential for the long-term sustainability of Tile Heritage. Membership and sponsorship have always provided the core of the Foundation's financial stability.



For the past 34 years Tile Heritage has received substantial support from sponsors in the tile industry. Diverse membership within and beyond the industry has also played a major role. The Foundation has benefited from substantial grant support as well.

We invite you to partner with the Tile Heritage Foundation by becoming an Industry Sponsor protecting tile history today, validating that history for tomorrow!



Tile enthusiasts tour installations in Philadelphia.

TEAM UP WITH TILE HERITAGE!

Email: foundation@tileheritage.org

www.tileheritage.org

Tile Council of North America (TCNA) has embraced Tile Heritage for many years recognizing the importance of maintaining the historic tile industry archives and collections. TCNA advocacy and inclusiveness has contributed greatly to the Foundation's validation and visibility.

Tile Heritage Archives has been accepted as a contributor by the Online Archive of California (OAC), providing access to the Tile Heritage Archives Index nationwide and beyond!

"It is very important that we, as an industry, promote an appreciation of tiles - to know what came before. Individually we are not always able to do that, but by supporting the Tile Heritage Foundation we can preserve the history. As an industry we should support that work."

Svend Hovmand

YOU ARE INVITED!

The Tile Heritage Foundation encourages manufacturers, studios, distributors, dealers, contractors, installers, the design community and other tile-related support industries to establish a **THF Archive File** where materials related to your company's history including photography, promotional materials, correspondence and other important items of interest will be kept safe for posterity. Digital images of documented installations are also encouraged.

This **THF Archive File**, a Tile Heritage service, is open to the greater tile community—THF members and non-members alike, at no charge. Currently we have over 450 historic tile companies and over 700 files in the Contemporary Archive, which includes manufacturers, studios, dealers and installers. Utilize the free resources of the Tile Heritage Foundation to hold your valuable company records for posterity.



To CONTRIBUTE to the SUPPORT
and continuing DEVELOPMENT
of the Foundation's **THF Archive Files**
contact foundation@tileheritage.org

TILE HERITAGE RESOURCE DIRECTORY

Take Advantage of a Free Listing

The Tile Heritage Foundation is presently compiling information for the next edition of the Resource Directory. We need updated information from you. Unique in its content, breadth and format, the THF Directory is designed to be used as a resource by architects and designers, preservationists, historians, collectors, dealers, installers as well as tile artists, artisans and manufacturers, among others.

Directions: Please circle the code below that best represents your primary occupation (or preoccupation). Circle the code next that represents your secondary interest and put a "2" beside the circle. You may make a third choice as well: put a "3" beside it. Return this form with your code(s) marked, and we will enter your information to the master database or make the necessary changes in your present entry. We urge you to act now as the deadline is near. Take just a moment and complete this form. Copy and enclose with your renewal or mail to Tile Heritage, P. O. Box 1850, Healdsburg, CA 95448.

All applicants receive an initial listing free of charge. The listing will include name, company (when applicable), address, phone, fax, email and website. Your primary ("1") code choice will determine the placement of your listing. **NOTE:** THF membership alone will not place you in the Directory; you must choose one or more codes to be listed.

Specialty Description: You are encouraged to submit a specialty description; there is no charge. **IMPORTANT:** limit your description to **170 characters** or less (otherwise we must do the editing).

Cost: The Tile Heritage Resource Directory is priced at \$25 (\$20 for THF members). Members who contribute \$60 or more each year will be offered the Directory for a nominal charge of \$5 to help defray production and mailing expenses.

CODES: Circle first ("1"), second ("2") and third ("3") choices as needed.

AB Builder/General Contractor
AC Commercial architect
AD Decorator
AH Residential architect
AI Interior designer
AK Kitchen/bathroom designer
AR Restoration architect

CC Tile contractor
CI Tile setter
CN Conservator
CR Specialist in tile restoration

DA Dealer of antique tiles
DC Dealer of commercial tiles
DD Tile distributor
DI Tile importer
DR Manufacturer or artist rep
DS Dealer of custom tiles

EC Educator/teacher
ET Tile enthusiast

HA Architectural historian
HC Collector of contemporary tiles
HH Collector of historic tiles
HS Appraiser/scholar/historian

MN Museum without a collection
MT Museum with tile collection

OA Art-related organization
OH Historical organization
OL Library or ceramic dept.
OT Tile-related organization

PA Publisher: art
PH Publisher: history
PT Publisher: tile-related

SC Supplier of clay, glazes, etc.
SG Supplier of setting materials
SM Supplier of machinery/tools
SP Supplier of maintenance products

TA Tile artist/designer
TC Architectural ceramist
TF Tile manufacturer
TM Tile maker (studio)
TP Potter
TR Specialist in historic reproduction
TS Specialist in tile production
TT Mosaic artists, suppliers, setters

Other

Complete and return this form to Tile Heritage.

Name _____

Company _____

Address _____

City _____ State _____ Zip _____

Work phone _____ Fax _____

Email _____ www. _____

Describe your specialty:

TILE HERITAGE FOUNDATION RESOURCE DIRECTORY

2021 - 2022



"Plus Ultra" by Mandy Baker
Jamison, Pennsylvania

"Plus Ultra," approx. 8" x 8" x 1/2".
Tile Heritage Award
presented to Cleota Reed in May 2017.

The THF Resource Directory 2021-2022
Email: foundation@tileheritage.org for availability.

Thirteenth Edition



Product Performance Testing Laboratory

Comprehensive Testing TCNA offers a broad array of ISO-accredited ASTM, ANSI and ISO standard tests to serve clients worldwide.

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Multi-Disciplinary Expertise TCNA engineers and scientists, along with the lab's collaboration with Clemson University, offer a broad and unparalleled expertise.

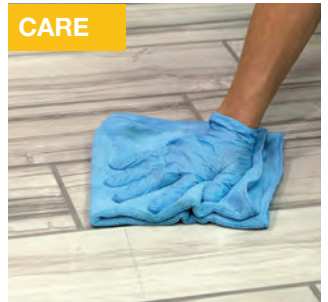
Standards Insight TCNA staff hold leadership positions in numerous international standards committees, allowing for a unique understanding of industry standards and testing methods.

To learn more about our full testing capabilities or to place a testing order, visit: www.tcnatile.com/test

Examples of materials tested: Stone, Tile, Plastic Based Materials (PBM), Agglomerate Stone, Installation Materials, and more. Custom (or non-standardized) testing requests are always welcome.



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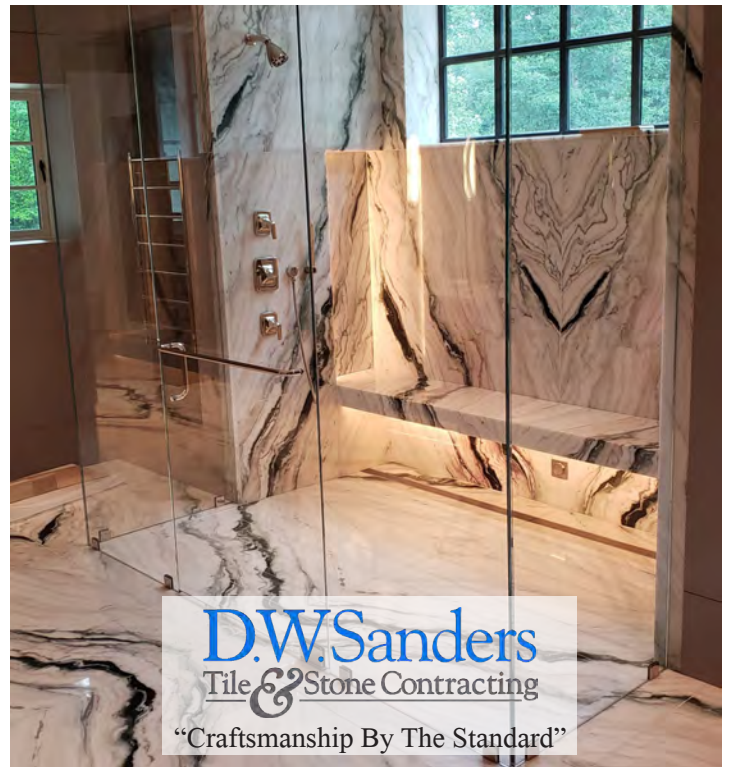
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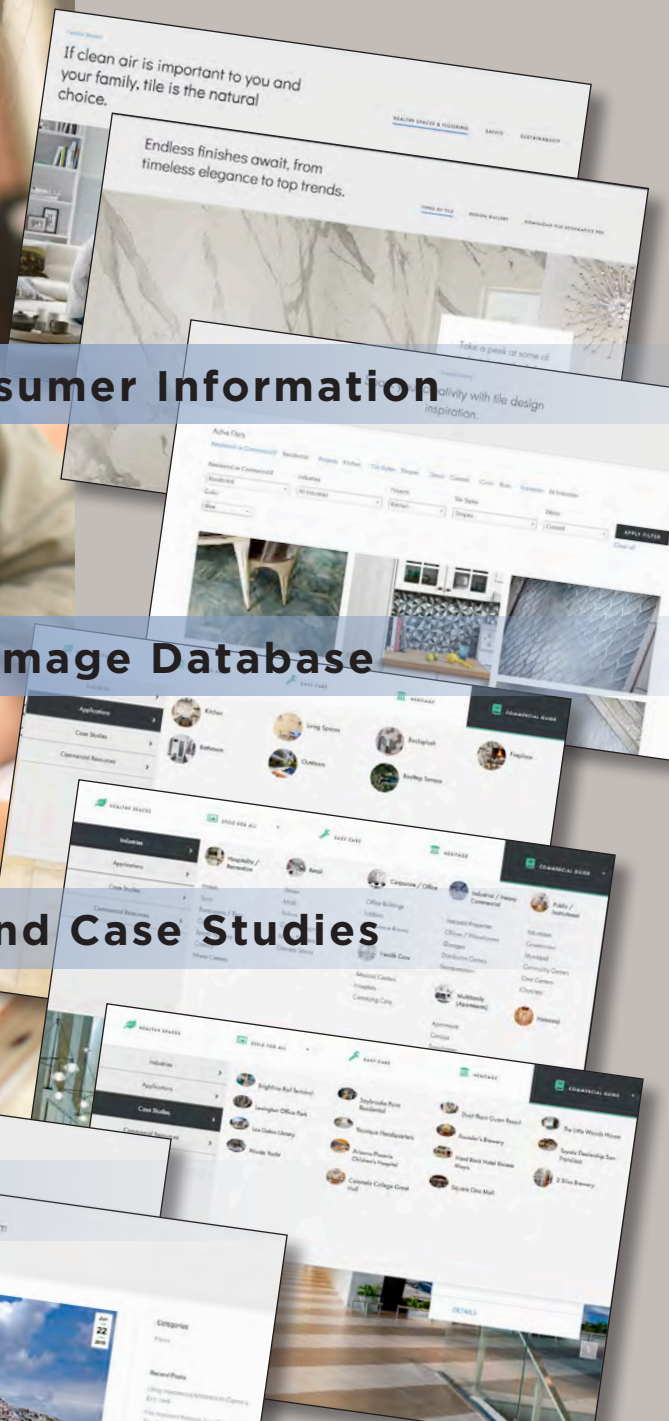
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*are uniquely qualified to
provide the craftsmanship
and service you deserve.*



The Tile Council of North America Handbook strongly recommends using installers who have demonstrated their commitment to their craft.

Because tile is a permanent finish, the lowest bid should not be the driving factor, but rather who is the most qualified to perform the scope of the work specified.

TCAA Trowel of Excellence and NTCA Five Star Contractors have a proven track record of success for both residential and commercial installations. These companies have demonstrated their commitment to professionalism by passing rigorous review of their training, management and safety practices and enjoy strong support from peers, customers and suppliers.

Contact the NTCA and TCAA for qualified Five Star and Trowel of Excellence contractors for your upcoming project.



TILE HAS MANY FACES.

Beauty like this doesn't have to be fleeting... when your clients choose tile, that is. A properly installed ceramic tile floor will outperform and outlast any other floor covering product created for the same application, even outdoors in coastal conditions. In fact, neither mold, mildew, bacteria, nor the side effects of Man's Best Friend will leave tile in ruins: its hard surfaces stand up to the test of time. Smart and beautiful — that's why tile.



WhyTile.com

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