

**TILE CONTRACTORS
ASSOCIATION OF HAWAII**

Our licensed contractors have years of experience in perfecting their trade and guarantee work through skill, integrity and responsibility.



Tile for a Lifetime
The absolute finish for floors and walls.



**Look for our ad in the Building Trade Hawaii Magazine
in October 2022 and future issues!**

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2022 TCAH Scholarship Program Winners



Jennyl Chun is a family member of an employee with RYU Tile. She is enrolled at the University of Hawaii at Moana and will be graduating in 2024 with a bachelors degree in Environmental Design. She will then pursue her doctorate in Architecture.



Reyann Lee is a family member of an employee at BF Tile, Inc. and a graduate of Waipahu High School where she was the valedictorian. She is a sophomore at the University of California, Berkeley majoring in Electrical Engineering and Computer Science (EECS).



HAWAII CONSTRUCTION CAREER DAYS

The Tile Contractors Association of Hawaii is proud to be a sponsor once again. HCCD has created opportunities for Hawaii's public, private and charter high school students to explore the construction industry through hands-on activities, interactive exhibits, and challenging games presented by construction, engineering, and architecture firms; educational institutions; and trade apprenticeship programs. There will also be opportunities to operate some of our industry's heavy equipment, like backhoes, loaders, excavators and scissor lifts. The event will be held September 29 – 30 at Aloha Stadium on Oahu and November 17th at the Kauai Community College.



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Trending - Very Large Format Tile

Not too long ago, large-sized tiles were found where materials were offered for finishing industrial premises or public places.

Today the situation has completely changed, and not just large tiles, but very large ones. Even huge ones, are very fashionable. Product manufacturers create entire original collections that are dedicated to large-format ceramic tiles.

The main feature of large ceramic tiles is their distinctive ability to give the coated surfaces not only a more rigorous, but also a more refined look. However, a large format always requires additional space.

For example, in a small-sized bathroom, kitchen or corridor, such tiles will have to be repeatedly cut and carefully adjusted, which will ruin the original idea.

Large-sized ceramic tiles in the interior have been quite popular several years in a row. For this reason, they now have their own decorative and quality standard.

Source: New Décor Trends



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WHY SELECT TILE

The Multitude of Benefits

If you have a potential client, architect or specifier that is contemplating using tile, perhaps these positive features can help convince them of making the right choice to use tile.



Recycling & Reuse

There are many tile options available which are made from recycled materials. Plus, once installed, tile can be reused generation after generation. There's no question: combining incredible durability and responsible manufacturer usage of recycled content, tile is one of the most eco-friendly flooring options available.



Slip Resistant

There are a variety of slip-resistant finishes and textures available for tile flooring. Whether in the shower or on the pool deck, tile offers a safe option that gives you peace of mind.

Fire Resistant

Tile is nonflammable, meaning it doesn't produce smoke in a fire, reduces flame spread, and doesn't burn and give off toxic fumes, which can occur with simple kitchen accidents. All of this can be especially meaningful in the event of a fire emergency, especially when considering the importance of maintaining clear exit pathways.

The earliest use of decorative tiles was found in Egypt, dating from about 4000 BC. Tiles were also made by the Assyrians and Babylonians. They've been treasured for centuries due to their durability and stunning beauty..



Zero Allergens

Concerned about allergies and asthma? Tile is a great choice whether you're remodeling or starting from scratch. Unlike other surfaces, tile is both hard and impervious, meaning it's inhospitable to dust mites, bacteria, fungi, mold and other irritants.

Energy Efficient

Tile's inherent thermal mass reduces peak heating and cooling, which helps moderate temperature swings in your home. This means less work for your HVAC system and more energy savings for you.



Zero Formaldehyde

Since tiles are solid, they don't contain the binders common to other surfaces – binders like formaldehyde, often found in products containing medium-density fiber board, plywood and particle board. Why is formaldehyde a problem? It is known to lead to an increased incidence of asthma, particularly in children and the elderly – to the point that it has been federally restricted under the Formaldehyde Standards for Composite Wood Products Act.

Zero PVC

Tile flooring is also free from PVC, a resin commonly used in other surfaces to improve mechanical flexibility and heat stability. PVC contains phthalates and organotin, both regularly a subject of concern and discussion among health experts.



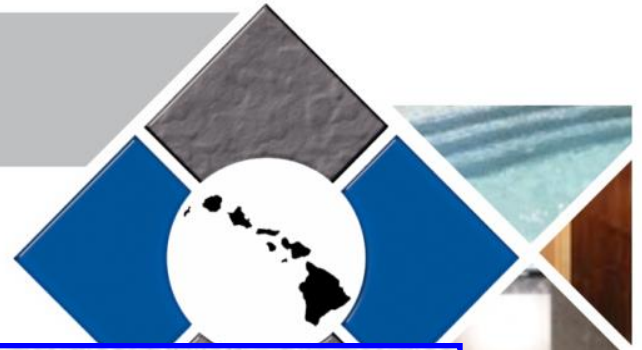
Eco-friendly maintenance: No harsh chemicals are necessary for cleaning. Wiping with soap and water is all that is needed to clean up most messes.

- **Bacteria-resistant:** Ceramic tile is inhospitable to the growth of bacteria and other microbes such as mold.
- **Antimicrobial:** Ceramic tile options are available that can suppress and even destroy harmful microorganisms, such as mold, fungi, bacteria, and viruses.
- **Allergen-free:** The high firing temperature of ceramic tile, generally more than 2000°F, burns off all organic compounds. Plus, ceramic's nonporous surface doesn't allow allergens in the environment such as dust, dirt, and pollen to penetrate.

Fire-resistant and nontoxic: Ceramic tile does not melt, burn or emit any toxic fumes when exposed to fire.

- **Hypoallergenic:** contains no allergens and allergens in the environment such as dust, dirt, and pollen cannot penetrate ceramic tile's nonporous surface.
- **No volatile organic compounds (VOCs):** VOCs are harmful gases that cause various health concerns and are emitted by virtually all nonceramic flooring types.
- **No polyvinyl chloride (PVC):** PVC is a resin found in some vinyl flooring that contains phthalates and organotins, both a concern among health experts.
- **No plastic:** The health and environmental concerns associated with plastic aren't an issue for ceramic tile.
- **Naturally occurring materials:** Ceramic tile is a healthy choice for both you and the environment. The natural clays and other materials used to make ceramic tile are plentiful and are often sourced within 500 miles of manufacturing.

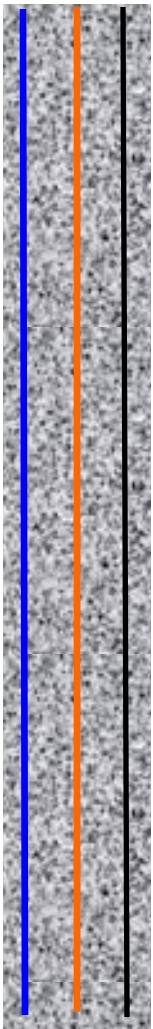
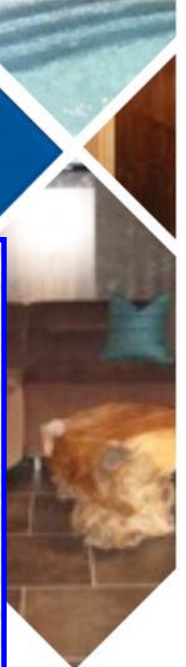
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Life-Cycle Costs for Tile

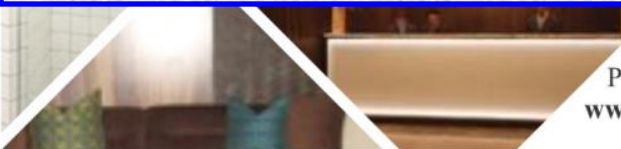
Tile continues to be a wise, long term investment. Below is an example of the cost per year compared to other items such as hardwood, laminate and carpet.

Life-cycle cost is comprised of the total dollars expended over the usable life of a flooring installation. It generally includes the first cost of the flooring, cost of installation (including the cost of disruption to business, if applicable), the cost of maintenance over the expected service life of the flooring, and disposal, reclamation, and removal costs. The total cost is then divided by the number of years the floor is expected to last, resulting in a total cost per year. That figure can then be divided further into cost per square foot or other appropriate metrics. Calculating the life-cycle cost for all flooring products being considered allows a business to compare them on even ground.



Life-Cycle Costs for Floor Finishes (per square foot)

Floor Finish	Installed Cost	Life Cycle Cost	Expected Life (y)	Cost Per Year
Quarry Tile	\$6.83	\$16.13	50	\$0.32
Glazed Ceramic Floor Tile	\$7.00	\$16.30	50	\$0.33
Glazed Porcelain Tile	\$8.34	\$17.64	50	\$0.35
Mosaic Tile	\$8.20	\$17.50	50	\$0.35
Unglazed Porcelain	\$8.30	\$17.60	50	\$0.35
Natural Hardwood	\$9.31	\$20.80	50	\$0.42
Travertine-Turkish	\$12.50	\$21.80	50	\$0.44
Marble	\$21.00	\$30.30	50	\$0.61
Laminate	\$8.84	\$17.77	25	\$0.71
Man-Made Hardwood	\$9.58	\$18.51	25	\$0.74
Portland Cement Terrazzo	\$14.88	\$24.27	30	\$0.81
Stained Concrete	\$12.40	\$24.60	25	\$0.98
Carpet	\$3.22	\$ 6.50	6	\$1.08
Resin Terrazzo	\$8.50	\$16.53	15	\$1.10
Sheet Vinyl	\$6.90	\$13.90	10	\$1.39
Poured Epoxy	\$8.18	\$15.18	10	\$1.52
VCT	\$3.91	\$18.35	10	\$1.83



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Grout Joint Alignment vs. Grout Joint Uniformity

**Scott Conwell, FAIA, FCSI, CDT, LEED AP
International Masonry Institute**

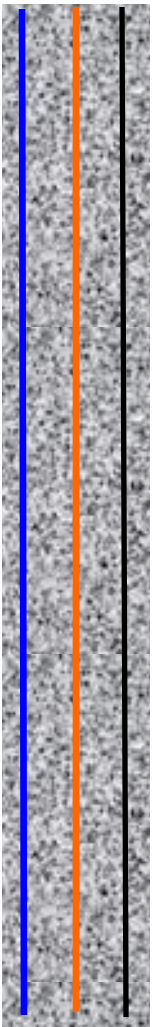
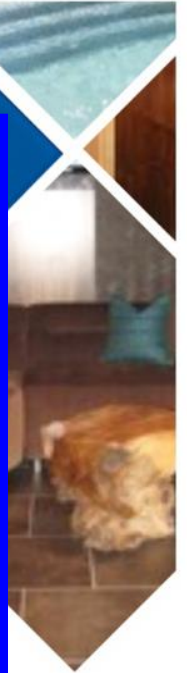
“Using tile spacers when laying out floor tile will make your grout joints nice and straight... right?” Unfortunately, this belief is commonly held by building owners, homeowners, and even some design professionals, but it is incorrect. As experienced tile installers know, spacers are more likely to hurt the installation than to help it.

How can spacers, which virtually guarantee grout joint uniformity, i.e. grout joints all the same width, be a bad thing? It has to do with the allowable dimensional variation in the size of the tiles and the inconsistency of the wall dimensions across a room. If the individual tiles were all the same size, and if the corners of the room were perfectly square, then spacers might be useful. However, we know that tile sizes vary and room corners are often out of square, so good installers rely on being able to make slight adjustments to the grout joint width in order to maintain grout joint alignment.

According to Table 10 in ANSI A137.1, a calibrated porcelain tile is allowed to vary in its facial dimension by as much as ± 0.08 inches, equating to a total variation by as much as 0.16 inches. In other words, tiles could vary in size by over 1/8 inch! Similarly, the wall-to-wall dimension could vary drastically when taken from opposite ends of the room. If spacers are used, the grout joints might have a uniform width, but they simply won't line up, and the installation will look terrible.

To accommodate the imperfections in the tile and the imperfections in the backing walls, skilled union tile installers are trained to lay out a floor by snapping a grid of chalk lines that will dictate where grout joints will fall. For example, if the tile size is 12" x 12" nominal, a tile setter may snap lines every four feet in each direction, lining up a corner of the tile on the intersecting grid lines every four feet. Then the installer would lay tile inside the grid with grout joints that are more or less uniformly spaced. This will ensure that the joints line up every four feet, and within each four-foot section of floor, there is uniformity. When the tiled floor is viewed in its entirety, all the joints won't be uniform, but they will be aligned, which is the more important visual consideration.

To the larger issue of layout, the tile setter snaps the grid on the floor in the precise position to eliminate or minimize cut tiles, and it is generally parallel to the longest or most prominent wall in the room. The grid is kept square using the largest possible Pythagorean triple for the size of the room. For example, the installer would snap a right triangle of 8 ft., 15 ft., and 17 ft. or a right triangle of 5 ft., 12 ft., and 13 ft. In smaller rooms the triangle may be 3 ft., 4 ft., and 5 ft.



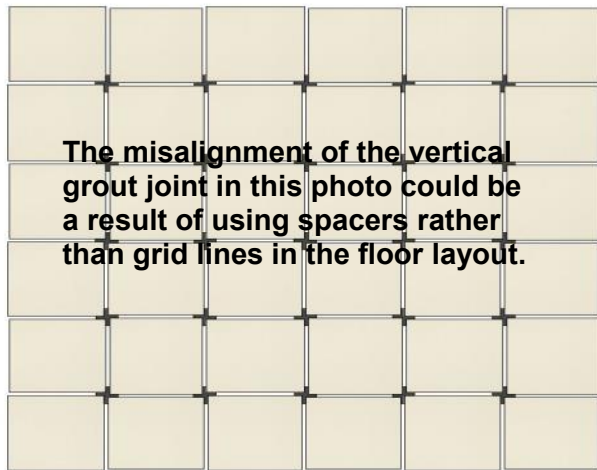
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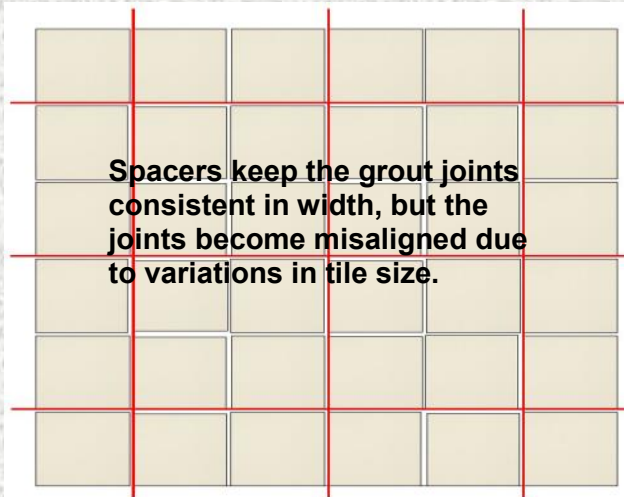
Now that we've demonstrated the need for variable grout joint width to maintain proper grout joint alignment, let's examine what the ANSI standards say about allowable variation in grout joint width. ANSI A108.02 states, "To accommodate the range in facial dimensions of the tile supplied for a specific project, the actual grout joint size may, of necessity, vary from the grout joint size specified." This language is vague. It does not give a specific value for allowable variation, but it does alert the end user that a certain amount of inconsistency in grout joint width is unavoidable.

In conclusion, imperfect site conditions and manufacturing limitations of tile are two factors that require tile installers to make slight adjustments which spacers would otherwise preclude, in order to maintain alignment of grout joints. Experienced union tile contractors and installers have the training and expertise to grid a floor, lay out the pattern, and provide an installation that looks great even under less than ideal jobsite conditions.

Note: this article is adapted from a previous article by the same author published in 093000 Contractor, the journal of the Tile Contractors' Association of America.



The misalignment of the vertical grout joint in this photo could be a result of using spacers rather than grid lines in the floor layout.



Spacers keep the grout joints consistent in width, but the joints become misaligned due to variations in tile size.



Using a multi-unit grid keeps grout joints aligned, but the joints' widths vary due to variations in tile size.

