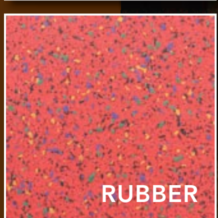
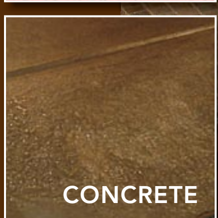
Smart Choices in Bathroom Flooring

Tile is still the traditional choice, but it's not the only floor that performs in this wet environment

BY MATTHEW TEAGUE





Linoleum photo: courtesy of Mannington

Bathroom floors come with their own particular set of requirements. Like any floor, they should be chosen with style, durability, and comfort in mind. But a bathroom floor also must be able to handle moisture and humidity from daily use as well as any possible leaks that could occur in the future.

That said, not all bathrooms are created equal. While the family bath may have to endure splashing toddlers in the tub, you can use a master bath more responsibly, wiping up small spills as they occur. A guest bath or half-bath may be even less threatened by water. The less use your bathroom sees and the fewer fixtures it houses, the more options you have for bathroom flooring.

Choosing a bathroom floor that can handle the required amount of water is the first hurdle. You can expect a certain amount of water all the time—drips as you get out of the shower or puddles from the occasional overspray, for instance. Those minor mishaps are easily wiped up, but it's the months or years of that small bead of water dripping around a shower door or condensation running down the side of the toilet that is more likely to cause trouble. Also, because the bathroom has more plumbing than any other room in the house, it's the place most likely to spring a leak. Just hope it doesn't happen while you're on vacation.

In addition to the water you see, there's also the water you can't see: humidity, which affects some floors more than others. While a vent fan helps, you have to make sure that everyone turns it on. You also can wire it through a timer to run for a while after you leave the room.

Remember that all bathroom floors should be well-sealed and maintained, but that some require more work than others. Also, it's entirely possible that those splashing toddlers will turn into sloppy teenagers.

Matthew Teague is a contributing writer. Photos by *FHB* staff, except where noted.

DESPITE ARGUMENTS, WOOD CAN WORK

The arguments against solid- and engineered-wood floors in a bathroom are obvious: Wood not only absorbs water pretty easily, but it also swells in the process. The everyday humidity of a bathroom may test the limits of expansion joints where the floor meets the walls. In cases of prolonged leaks, it's almost a given that any species of wood floor, and probably the subfloor, will have to be torn out. Still, wood floors are beautiful and feel good underfoot, often providing a smooth transition from bedroom to bath.

Although it is hard to find a designer who claims that putting wood flooring in the bathroom is a good idea, when pressed, almost all of them will admit to doing it regularly. It's really a case of risk assessment.

In a family bath that sees heavy use from kids, wood flooring just doesn't make sense. But in a master bath where the residents understand that standing water has to be wiped away, or don't mind the character and patina of water-stained floors, wood flooring will last as long as it will in any other room of the house.

Consider sectioning off the bathroom so that wetter areas are floored using a more moisture-friendly material. Architect David Edrington uses solid surfaces like stone or marble—often offcuts from countertops—to prevent condensation on the toilet from reaching wood floors (photo above). Because hardwoods exposed to humidity will expand and contract, high-quality vent fans are a must.

The maintenance for wood in the bathroom is the same as for any other room: Sweep and mop. But you should expect to refinish the floors at the first signs of a worn finish. Penetrating water not only expands the wood, but also bleeds down toward the subfloor. To assess the finish, perform the same water-droplet test used on tile (p. 56).

The best chance at success is probably engineered-wood flooring. Not to be confused with laminates (see below), engineered flooring is a layer of real wood backed by layers of plywood, which minimizes movement caused by humidity. Because it's less likely to cup or warp, there is less chance that gaps will open between planks, allowing water to penetrate. Factory finishes are often top quality, and they certainly ease installation, but to seal the joints between planks completely, opt for unfinished engineered hardwoods and lay on the finish yourself.

COST

Solid wood: \$2–\$10 per sq. ft.
Engineered: \$3–\$12 per sq. ft.
*Costs reflect materials only.

SOURCES

Advantage Trim & Lumber
www.advantagelumber.com

BHK of America
www.bhkmoderna.com

Bruce Hardwood Flooring
www.bruce.com

Carlisle Wide Plank Floors
www.wideplankflooring.com

Goodwin Heart Pine
www.heartpine.com

Heartwood Pine Floors
www.heartwoodpine.com

Mountain Lumber
www.mountainlumber.com

PermaGrain
www.nydreeflooring.com

Tarkett
www.tarkett-floors.com

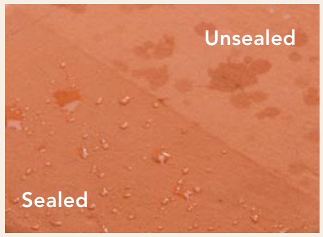
What It's Worth
www.wiwpine.com

Think twice before choosing laminate flooring

Because of their relatively low cost, laminates have become a popular choice in flooring. Most modern laminates—whether in planks or tiles—click together to form a floating floor with dry mechanical joints. While these joints are touted as being water-resistant, they aren't waterproof. Water may eventually reach the fiberboard core of the flooring, or the subfloor below. If you insist on laminate, opt for a style that installs with a one-piece continuous vapor barrier that covers the entire subfloor instead of having it attached to the bottoms of individual tiles or planks.

TILE OFFERS SENSIBLE STYLE

Tile is likely the first option that comes to mind when you think of bathroom flooring, and for good reason—it's the most popular. Made of clay and other nonmetallic minerals shaped, pressed, and fired at high temperatures to create a hard surface, tile can handle water and comes in an almost endless variety of styles. You can choose from ceramic, porcelain, natural stone, or, in small doses, even glass. On the downside, tile is tough on your legs and back. In a room where you're often barefoot, it's also cold. It might feel nice on the Texas coast, but it is less than ideal for Maine winters. That said, adding radiant in-floor heat to a bathroom floor—tile or otherwise—is now easier than ever (see "Easy heat for a bathroom floor," p. 59).



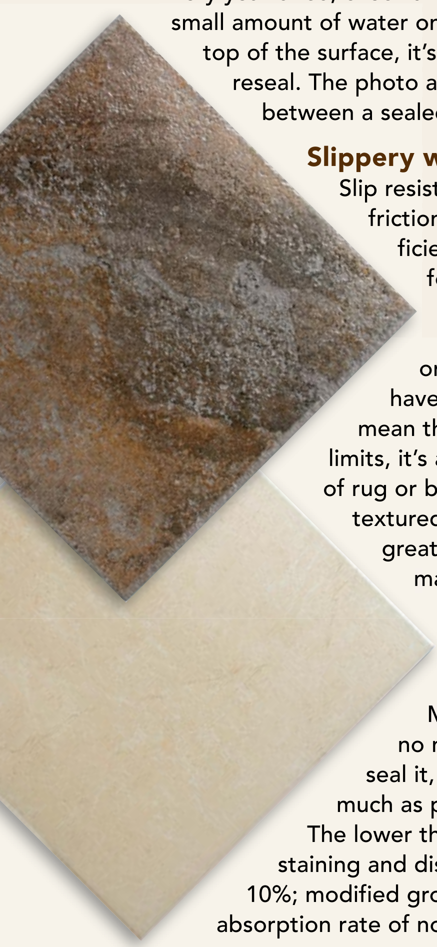
The important factors to consider when shopping for bathroom floor tile are water porosity and slip resistance.

Some tile is absorbent

The higher the tile's porosity, the more water it will absorb. The determining factors are the body of the tile and, if any is used, the surface glaze. Porcelain, for instance, has a dense body and a durable glaze, so its absorption rate is about 0.5%. On the other hand, a Sausalito ceramic tile left unsealed can be up around 25%—basically a sponge. Your best bet for a bathroom floor is to use unglazed tiles with an absorption rate of no more than 0.5%, or glazed tiles with an absorption rate of 3% or less.

A higher porosity rate doesn't necessarily mean you can't use the tile, but it does mean that you'll have to seal it after installation and reapply the sealer every year or so to prevent standing water from reaching the vulnerable subfloor.

Every year or so, check the absorption of stone or porous tiles by placing a small amount of water on them. If the drops of water bead up and stand on top of the surface, it's sealed; if they absorb into the surface, it's time to reseal. The photo above illustrates the difference in absorption between a sealed and an unsealed terra-cotta tile.



Slippery when wet

Slip resistance is rated with what's known as a coefficient of friction. Ideally, tile floors in showers should have a coefficient of "0.60 wet" or greater. It's not a bad idea to follow this same rule for the entire bathroom, which, at some point, is likely to be wet underfoot. These numbers, however, rule out heavily polished tiles or stones like granite, marble, or travertine, which have a much lower slip resistance. A lower rating doesn't mean that you can't use smooth tile, but if you push the limits, it's a good idea to supplement the area with some type of rug or bath mat outside the shower and tub. Choosing a textured tile is a bit of a trade-off: More texture creates greater slip resistance and hides a little dirt, but it also makes the tile tougher to clean (photos left).

Remember that floor tiles can be used on walls, but not all wall tiles can be used on floors.

Grout choice matters

Modern tastes lean toward thin grout lines because no matter how nonporous the surface or how well you seal it, grout lines catch dirt. To reduce the dirty look as much as possible, choose a grout with a low absorption rate. The lower the absorption rate, the more resistant the grout is to staining and discoloration. Regular, nonmodified grouts run about 10%; modified grouts average about 5%; and epoxy grouts have an absorption rate of no more than 0.5%.

COST

Ceramic/porcelain: 75¢–$20 per sq. ft.
Stone: $3–$18 per sq. ft.
*Costs reflect materials only. For stone tile, look for tile dealers, not stone dealers.

SOURCES

Ceramic Tiles of Italy
www.italytile.com

Crossville
www.crossvilleinc.com

Daltile
www.daltile.com

Fireclay Tile
www.fireclaytile.com

Green Mountain Soapstone
www.greenmountainsoapstone.com

Mannington
www.mannington.com

Marble Granite Depot
www.marblegranitedepot.com

Mosaic Tile Company
www.mosaictileco.com

Tile Council of North America
www.tileusa.com

Photo above: courtesy of Mannington

Most of the grouts on store shelves are latex- or polymer-modified; both are fine for most bathrooms. These products are just as easy to work with and offer the grout a little flexibility (about 1⁄64 in.) to combat cracking. Epoxy grouts (photo right) have the reputation of being difficult to work with, but modern products are much easier to use than those of 10 or 15 years ago. Epoxy grout is dense and provides a tenacious bond. And while you can't leave coffee sitting on it for days, it's otherwise immune to staining, which is a welcome treat in the bathroom, where one of your major tasks is to wash away dirt.

The newest entrants to the market are glass grouts, such as Prism from Custom Building Products, which use crushed glass (usually recycled) instead of sand. Glass grout is easy to work with and is less prone to shade differences because it has a lower absorption rate, somewhere between modified and epoxy grouts. And unlike the sand found in traditional sanded grouts, glass doesn't absorb water, which means that it cures to a more uniform color.

Where tile floors go bad

Want a long-lasting tile floor? Start with a proper installation.

Reinforce the subfloor

Tubs, vanities, and toilets are heavy. Add tile, and it's often necessary to beef up the floor to prevent cracked tile or grout lines. Unless you're using an uncoupling membrane like Schluter-Ditra (right), which can be installed over ¾-in.-thick floor sheathing, use layers of plywood to create a subfloor thickness of 1⅛ in.

Choose the right cement

Never use mastic on the floor; tiles should always be placed in thinset cement. Choose a latex-modified thinset over a wood subfloor. Nonmodified thinset is a good choice for installing over concrete, but it will come loose from wood substrates.

Don't overwater the grout

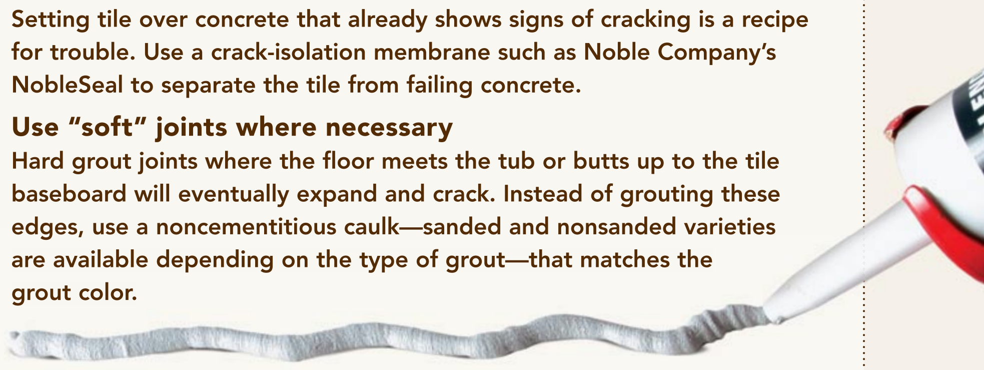
Too much water added to the grout mix washes out the portland cement and weakens the grout. The same goes for washing off the grout after installation; keep the water to a minimum to keep the grout at its strongest.

Watch for cracked concrete

Setting tile over concrete that already shows signs of cracking is a recipe for trouble. Use a crack-isolation membrane such as Noble Company's NobleSeal to separate the tile from failing concrete.

Use "soft" joints where necessary

Hard grout joints where the floor meets the tub or butts up to the tile baseboard will eventually expand and crack. Instead of grouting these edges, use a noncementitious caulk—sanded and nonsanded varieties are available depending on the type of grout—that matches the grout color.



RESILIENT FLOORS HAVE COME A LONG WAY

Resilient floors, which compress a bit when walked on, are a good choice because they are quiet, feel good underfoot, and in many cases are water resistant. Resilient floors are available in either sheets or tiles, but the fewer the seams, the better.

LINOLEUM

Linoleum was largely ignored from the 1960s to the 1990s, when vinyl dominated the resilient-flooring market. In the past 15 years, however, it has made a great comeback, due largely to its status as a green product. Modern linoleum, such as Forbo's Marmoleum or Armstrong's Marmorette, is made of all-natural products (linseed oil, wood flour, limestone, and tree resins pressed onto a natural jute backing), is biodegradable, and has few or no VOC emissions. It can be installed using a solvent-free adhesive and is naturally water resistant, antistatic, antimicrobial, and antiallergenic. Linoleum is homogenous throughout, which means the appearance suffers little with wear. It also ages well. Exposure to air hardens the linoleum, but it remains resilient.

Avoid seams by choosing sheet linoleum instead of tiles, and either run the material under the tub or seal joints with silicone to prevent water from working its way to the subfloor. Maintenance requires only sweeping and occasional damp-mopping using a pH-neutral cleaner. You also can reseal linoleum, and you should at least test the sealer every year. Linoleum pricing is comparable to wood or high-end vinyl.

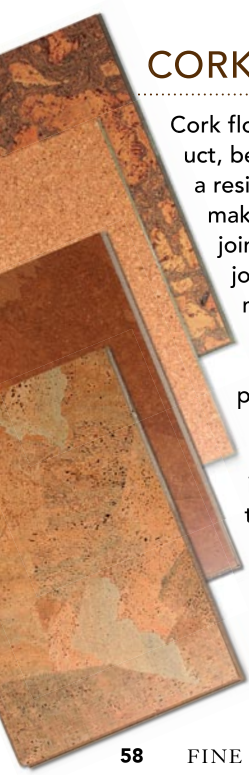
COST

$3–$6 per sq. ft.
*Costs reflect materials only.

SOURCES

Armstrong World Industries
www.armstrong.com

Forbo Flooring Systems
www.themarmoleumstore.com



CORK

Cork flooring can be classed as both an engineered product, because it consists of a sandwich of substrates, and a resilient floor, because it compresses and springs back, making it softer underfoot and more forgiving on your joints. Most cork flooring installs with click-together joints. Some claim that it forms a gasketlike seal, making it resistant to water infiltration, but a glue-down product is preferred in bathrooms. To help seal the joints between tiles and to increase water resistance, lay on a few extra coats of sealer after installation.

You also can buy cork flooring in sheet form, which may be preferred in bathrooms.

COST

$4-$14 per sq. ft.
*Costs reflect materials only.

SOURCES

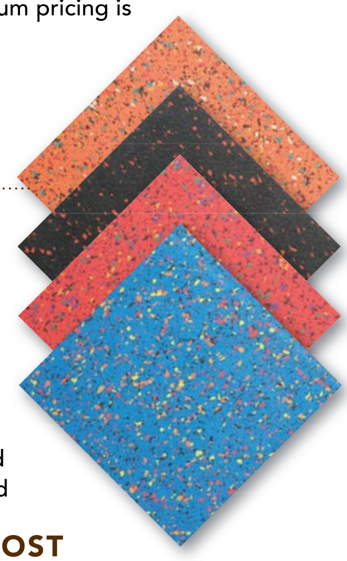
AmCork
www.amcork.com

Corkdirect
www.corkdirect.com

Lumber Liquidators
www.lumberliquidators.com

USFloors
www.naturalcork.com

RUBBER



For a more commercial look in the bathroom, consider a rubber floor. It's warmer than tile or even hardwood, and it feels good underfoot. Some consider it a green product: Expanko's Reztec is made of recycled rubber (often from old tires), and the company's XCR-4 is made of cork rubber. It comes in both sheets and tiles, though sheet rubber is less expensive and preferred in wet areas. While it can be laid loose, you're better off gluing it down with an adhesive that isn't water soluble. It's also a good idea to use a membrane or to paint on a waterproofing layer like Gacoflex before installing the floor. To minimize off-gassing and the resulting odor, Expanko recommends laying on a sealer coat before adding your finish coats.

COST

$2.50–$20 per sq. ft.
*Costs reflect materials only.

SOURCES

Expanko
www.expanko.com

Quality Flooring 4 Less
www.qualityflooring4less.com

Photo top right, this page: courtesy of Mannington. Photo top right, facing page: Dennis Anderson.

VINYL

Today's vinyl is made to mimic almost any flooring choice you can imagine, in both appearance and texture. The 1⁄16-in. to ¼-in. flooring is composed of multiple layers: a wear layer, a decorative layer, a foam core, and a backing of either felt or fiberglass. Fiberglass backing is the best choice for bathrooms because felt backing doesn't react well to water. Fiberglass backing also has a layer of vinyl on the bottom, making the product itself completely waterproof.

Although it's available in tile up to 12 in. sq., 6- or 12-ft.-wide rolls are often a better choice for smaller bathrooms because they leave no unsightly, water-threatened seams. The material can be glued down, applied with a pressure-sensitive adhesive, or floated. For the ultimate peace of mind, opt for a glued-down floor. Leave a gap at the perimeter of the room, cover it with baseboard, and seal the joint with silicone. Where vinyl meets the tub, shower, or toilet, it's always best to run the flooring under the edges to eliminate that edge seam. If that's impractical, seal the joint with silicone. Maintenance of vinyl is minimal: Sweep and damp-mop, using manufacturer-recommended products.

COST

50¢–$5 per sq. ft.
*Costs reflect materials only.

SOURCES

Amtico International
www.amtico.com

Armstrong World Industries
www.armstrong.com

Congoleum
www.congoleum.com

Mannington
www.mannington.com

CONCRETE IS A DURABLE, STYLISH CHOICE

Concrete floors lend a modern, industrial look that is quickly catching on—and with good reason: They can be poured using local ingredients, making them a green choice. If you're already pouring a concrete slab, the expense of finishing and sealing is nominal. As far as handling the water present in a bathroom, well-sealed concrete shouldn't have any problem. On the downside, concrete almost always feels cold to the touch, so using heat mats or some kind of in-floor heat is a good idea.

While not a frequent choice, a concrete floor in the bathroom should, in many cases, be an obvious one. Concrete can be finished in a variety of ways using colors, stains, and aggregates of almost any kind. Concrete can be left rough or polished smooth, but before you buff it to a glasslike finish, remember that slip resistance is a major concern in the bathroom; a swept or textured finish might be better.

Maintenance for a concrete floor is minimal: Sweep and damp-mop as needed. But you should check the sealer on the floor every year or so. Again, use the water test: If a drop of water beads up, the floor is well-sealed; if it absorbs into the concrete, apply a fresh coat of sealer.

COST

$2–$5 per sq. ft.
*Costs reflect materials only.

Easy heat for a bathroom floor

Warming the bathroom floor is much easier than it once was. There is a wide range of manufacturers offering electric, in-floor heating systems. These radiant systems feature electric coils woven through a section of matting. They are wired to a wall-mounted thermostat, or set on a timer to provide heat only when you need it. Although they won't provide enough heat to replace your main system, they'll keep your toes toasty. You can use them in conjunction with a wide range of flooring systems, including tile, stone, and engineered products.

These mats usually raise the floor level slightly, which means you'll have to use a floor-leveling compound to get over the wires. A few products, like those from Nuheat, can be set into the thinset during tile installation. You can buy prefab mats or have them custom-cut to cover the entire floor, which is more economical than you might imagine. These systems typically add only a few hundred dollars to the price of the floor.