



What Lies Beneath

[American School and University](#)

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A survey of carpet and hard surface flooring options for educational institutions.

When designing a school or university, educators want to ensure their buildings have solid footings. Good [flooring](#) design affects such things as sound transmission, temperature, air quality and visual appearance. Higher education institutions know that “creating a positive flooring aesthetic can help to market a school and attract students,” says Laura Casai, [interior design](#) group leader at TMP Architecture in Detroit. And a welcoming environment boosts student learning and teacher satisfaction.

Following is a run-down of some of the flooring choices available to schools and universities.

Carpet

“There is an ever-present tug of war when talking about installing carpet versus resilient flooring in classrooms,” Casai says. “Some districts say carpet is best because it is acoustically absorbent and it provides a more friendly space for kids to play. Other districts say carpet is a germ-catcher and don’t want it anywhere near their classrooms.”

Typically, classrooms will choose a combination of carpet and hard surface material. For schools that select carpet, the Carpet and Rug Institute recommends carpet with a low-pile height, dense tuft and tight loop to prevent debris from getting caught in the fibers. The Institute says a carpet with a rating of 4 or 5 is ideal for a school’s heavy traffic locations, including entrances, corridors, student break areas and classrooms. A rating of 3 or higher provides normal durability appropriate for libraries, conference rooms, media centers or classrooms with limited use. And a rating of 2.5 or higher is appropriate for teacher or administrative offices.

Carpet tiles can make it less expensive to replace problem areas in K-12 classrooms, and beyond. Casai says common areas at higher education institutions face “the same scenarios as in kindergarten.”

“There’s a trend in colleges and universities to create open, collaborative common spaces [where you’ll find] kids sprawled out on the floor,” Casai says. In these instances, carpet is a warmer and more inviting floor surface.

Of course, schools will need a vacuum to keep carpet clean. Casai also recommends purchasing carpet with recycled content in the backing so that it is easier to recycle when it wears out.

Vinyl Composition Tile

Vinyl composition tile (VCT) is a resilient flooring manufactured primarily from limestone. Vinyl and color pigments are added to provide product flexibility and design, according to the Resilient Floor Covering

Institute (RFCI). The tiles are typically manufactured in 12-inch-by-12-inch squares and can be used in a range of color and design combinations to create custom effects.

VCT has been a popular choice for schools, probably because it is inexpensive and supplies are prevalent. RFCI says VCT also accounts for more square footage than any other category of resilient flooring because it is easy to handle and install. However, VCT requires frequent re-waxing, increasing [maintenance](#) costs. Casai says the product also is non-dimensionally stable.

“VCT tends to shrink and expand as seasons change. As a result, it can be relatively brittle and crack if there is any movement in the foundation,” she explains. As tiles shift, she says, obvious grid lines around the squares are filled with dirt and wax.

For these reasons, design firms often recommend other types of resilient flooring that may be more expensive up front but have lower maintenance costs.

Luxury Vinyl Tile

Luxury vinyl tile (LVT) has a higher vinyl content than VCT that improves its appearance and durability, RFCI says. Additionally, the product can visually replicate natural stone, wood, concrete, metal and other materials, the organization says. In fact, many of these products, such as the wood designs, are made in plank form to enhance the look of the finished installation.

Many schools tout LVT’s easy maintenance compared to VCT. For example, the University of North Carolina at Charlotte is looking into this flooring for [new construction](#) because it requires about one-fourth of the labor cost to maintain.

For durability, the World Floor Covering Association recommends schools use LVT with a protective top layer (mil layer) no lower than 20 mil. Quality products will have as high as a 40-mil layer, the association says.

Linoleum

Invented in the 1860s, linoleum “is experiencing a revival in popularity due to its natural ingredients and environmental properties,” RFCI says. Because linoleum is comprised of natural linseed oil, wood flour, limestone, cork and tree resins, Casai says the flooring is “very forgiving and resilient” with self-healing properties, so that if it is gouged a little it will “heal” itself. Maintenance costs are less than VCT. However, there is no linoleum production in the United States, necessitating conservative lead times.

Rubber

Rubber flooring is commonly used in educational facilities for its waterproof and slip-resistant properties, ideal in environments that require frequent or harsh cleaning, RFCI says. It comes in customizable colors and thicknesses, and surface texture can vary from smooth marbleized or chip designs to raised textures, including circular, square, flagstone, hammered or diamond-plate patterns. City Hall Academy at the Tweed Courthouse in New York took advantage of rubber flooring’s color capabilities to create a map of the city, an underfoot teaching tool.

Designers like Casai recommend rubber flooring because it is durable and quiet and warm to walk on. “We have frequently used rubber in [locker room](#) areas, athletic corridors, free weight areas and track areas,” she says, but adds her firm also has used it as wainscoting to provide interest and durability on a wall.

However, rubber flooring typically has a higher initial cost and requires experienced, professional installation, RFCI says.

Cork

Interest in cork also is increasing due to it being a renewable resource, made from the bark of the Cork Oak. Cork flooring is a natural product so it will show the natural variations that occur in the bark, RFCI says. The product is installed like hardwood and requires a urethane coating. Additionally, the product needs to be re-sealed every few years as it absorbs moisture, rendering it unsuitable for bathrooms or any other rooms where moisture will be present.

Terrazzo and Tile

Terrazzo — marble or granite chips set in cement or epoxy resin that is poured and ground smooth when dry — and ceramic tile are found in school areas like entrances and common areas that require high durability and low maintenance, but don't need [acoustic](#) benefits.

Terrazzo can contribute to [sustainability](#) efforts. In a class project about conservation and using different types of [lighting](#), seventh graders at Central Middle School in Kokomo, Ind., discovered that the school's terrazzo floors reflected more light and created a brighter hallway than carpeted areas. As a result, the school plans to remove carpeting from hallways on other floors as it renovates its facility, according to the North Central Terrazzo Association.

Porcelain tile is another product that's great for retrofits, Casai says. Her design firm frequently recommends tile for restrooms, pool decks, and locker rooms. Recently, manufacturers have developed super-thin tiles — about 1/8-inch thick — that are great for tiling over existing ugly tiles, she says.

While Casai says terrazzo and tile flooring is “pretty indestructible and you can get it in fun colors to make interesting designs,” you need a good installer and there is a hefty investment upfront.

Wood

Wood flooring provides resilience, shock absorption and [energy](#) return, which is why it's the flooring choice in more than 70 percent of the sports floor market, according to the Maple Flooring Manufacturers Association. Educational institutions often incorporate it into their gymnasiums, stages and auditoriums. Nevertheless, Casai says she increasingly is using it as a wall material as well, for maximum durability and a warm aesthetic.

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