



Wood Composite Decking

Over the past year or two, pressure-treated decking — long the American standard for outdoor living spaces and playground equipment

by Patrick McCombe

— has taken a beating over allegations that the arsenic used to treat it is a possible health hazard. The lumber-treatment industry has sought to put such concerns to rest by phasing out CCA in favor of less toxic alternatives (see *Notebook*, 4/02).

Even without arsenic, though, pressure-treated decking has shortcomings. Homeowners don't like the hassle of annual water sealing and maintenance. Builders hate dealing with its wane, warp, and diminishing

quality. And people in both categories could live without its nasty splinters. Pressure-treated lumber has a lower up-front cost, but that advantage will dwindle as CCA is replaced by the new generation of preservatives, which is expected to raise the cost of most PT lumber by 20% or so.

**These products promise
durability and low maintenance
— without cracks or splinters**

Manufacturers of composite decking are working hard to sell homeowners and builders on the long-term cost benefit of their decking. Alternative decking products eliminate the expense of annual water sealing or staining. The composites don't check or split and promise to outlast



Figure 1. These Fiberon samples demonstrate the weathering that occurs with virtually all composite decking. The sample on the left shows the material before weathering; the weathered sample is on the right.



even the most rot resistant of solid sawn species.

While the composites have several advantages, they have a few drawbacks, too. For example, many consumers have complained that they have a tendency to mildew, especially when installed in shady areas. Manufacturers respond that any decking product would mildew in those locations. While that may be true, the mildew has been a surprise to some homeowners, who felt they were promised a product that required no maintenance. The recommended solution to mildew is a semi-annual scrubbing with a deck wash that contains sodium hypochlorite and detergent. Keeping the spaces between boards free of debris also seems to help keep mildew at bay.

Another complaint is that the surface of composite decks gets uncomfortably hot with summertime sun. Promotional materials seem to lend credibility to that complaint: Manufacturers frequently promise that their products are cooler to the touch than their competitors' products, while virtually no comparison is made with solid wood decking.

Some consumers say that the composites look bad. While that's a matter of opinion, more colors and product choices than ever before increase the likelihood that consumers can find something they like.

Solid Composites

Of all the composites on the market, solid composites like Trex (the original and best-known alternative decking) most closely resemble the size and thickness of solid sawn decking. These void-free products consist of wood fiber combined with a weather-resistant polymer binder. The type of polymer varies from one

brand to another. Many manufacturers use at least some recycled content in their products, and this is a selling point for some consumers.

Solid composites differ from wood decking in several ways. For one thing, they lack the stiffness of their sawn-lumber counterparts, typically requiring joist spacing no greater than 16 inches on-center. Diagonal and commercial applications are limited to a 12-inch spacing. Their flexibility isn't all bad, though; because some composites can be bent more easily than traditional lumber, curves and round sections are easier to incorporate. Composites are generally much heavier than sawn lumber decking as well. This is not only a design consideration, it can also make moving the product a two-person job. In addition, composites have a greater coefficient of expansion than solid lumber. As a result, spacing between boards will vary with ambient temperature during and after installation. Manufacturers frequently specify wider gaps during cold weather installations to accommodate the later warm-weather expansion.

Composite manufacturers typically specify hot-dipped galvanized or stainless fasteners to secure their decking. It is important to remember that many pneumatic fasteners are zinc electroplate coated, not hot dipped. When pneumatic nailers are used, they often drive the fastener slightly below the surface. The resulting "mushroom" around the nail head can then be hammered flat.

Because composites almost always fade when

exposed to sunlight, customers should check weathered samples when choosing colors. Your supplier should have some. Weathering is usually complete in three to six months, depending on exposure (see Figure 1, previous page).

One exception to the rule for solid composites is Tendura, which is a solid tongue-and-groove porch flooring (all other T&G composites are hollow). It has a three-inch coverage and the boards are butted tight together, like traditional solid sawn porch flooring. Because Tendura doesn't have weep holes and is fitted without a gap, it is meant for covered applications only.

Hollow Composites

Hollow composites are generally lighter than their solid counterparts. They are also stiffer, which allows for wider on-center spacing — 20 to 24 inches for residential applications and 16 inches for commercial work. Hollow decking options can't bend the way the solid composites can, however.

Hollow products typically require wood skirting or proprietary trim pieces to hide the cut ends of boards (Figure 2). Although hollow boards generally don't expand and contract as much as solid composites, most manufacturers still recommend end-gapping to allow for changes in temperature. Some products are tongue-and-groove, which permits expansion.



Figure 2. Hollow products, like TimberTech, are lighter in weight than solid composites. Installers generally use skirting or trim pieces to hide the cut ends.

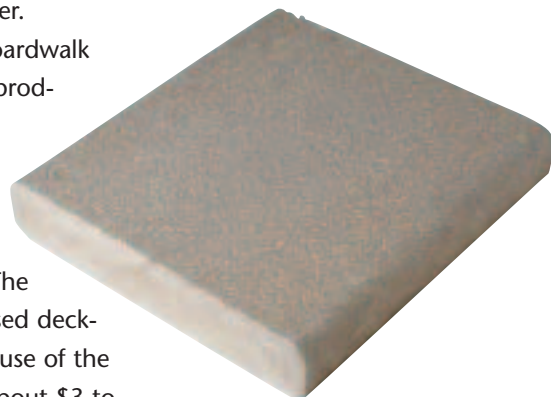
Still, care should be taken not to force the boards together too tightly, which would defeat the designed gapping. The hollow T&G products have weep holes, or fit loosely enough, to allow water to drain through the decking and prevent surface pooling. The hollow profile also offers a convenient space for running wires and cables for lighting, electrical devices, and speakers.

Like their solid counterparts, hollow composites fade as they weather, so customers should look at weathered samples.

Boardwalk Decking

Boardwalk decking, manufactured by CertainTeed, uses PVC as a polymer. CertainTeed claims that this makes Boardwalk more mildew resistant and gives the product a Class 1(A) fire rating. According to CertainTeed, this product has the greatest fire resistance in the industry. CertainTeed also offers a line of companion balusters and deck rails. The manufacturer claims that the PVC-based decking has better fastener retention because of the harder PVC composition. Prices run about \$3 to \$3.25 per square foot.

CertainTeed Corporation, Valley Forge, Pa.,
800/233-8990, www.certainteed.com.



Carefree Xteriors

USPL offers two decking products. Its composite product is made from recycled wood fiber and high-density polyethylene (HDPE) and is available in gray and brown. The company also manufactures a decking called simply HDPE, which is 100% recycled. HDPE decking is available in six colors: Redwood, Cedar, Light Gray, Weathered Wood, White, and Sand. Carefree Xteriors also offers a code-approved composite framing lumber. The fiberglass-reinforced structural lumber is said to last as long as the decking in coastal or wet environments. Cost of the traditional composite is about \$3 per square foot; the 100% recycled decking is about \$3.75 per square foot.

USPL Corp., Boca Raton, Fla., 561/394-3511,
www.usplasticlumber.com.



ChoiceDek

ChoiceDek is a 100% recycled composite decking by Weyerhaeuser. It has a rough-textured surface, making it the best composite for slippery areas like pools and spas, according to the manufacturer. ChoiceDek weathers to a driftwood gray and comes in a 5/4x6-inch profile. An enhanced version, ChoiceDek Plus, comes with a wood-grain texture. Because both products have relief grooves on the underside, skirting might be desirable to give completed decks a more finished appearance. Hand rails, balusters, and post wraps are also offered. ChoiceDek runs about \$3.50 to \$3.80 per square foot.

Weyerhaeuser Building Products, Walpole, Mass., 877/235-6873,
www.choicedek.com.



CorrectDeck

CorrectDeck, by Correct Building Products, is one of the newer entries in the composite market. The manufacturer claims that it's the strongest and lightest composite decking available today. Its greater strength is said to be due to a higher polypropylene content. CorrectDeck has a wood-grain texture and is available in three colors: Grey, Cedar, and Natural. It goes for about \$3.25 to \$4.25 per square foot.

Correct Building Products, Biddeford, Maine,
888/290-1235, www.correctdeck.com.



Eon Decking

CPI Plastics Group's Eon Decking is lighter in weight than other wood decking substitutes. The 2x6 product has a slightly textured surface and comes in four realistic colors: Silver Cedar, Cedar, Redwood, and Pine. The manufacturer claims that its product is more resistant to mildew and discoloration than other decking products. It has a proprietary T-clip fastening system that results in a fastener-free deck surface. Eon decking sells for about \$4.50 per square foot.

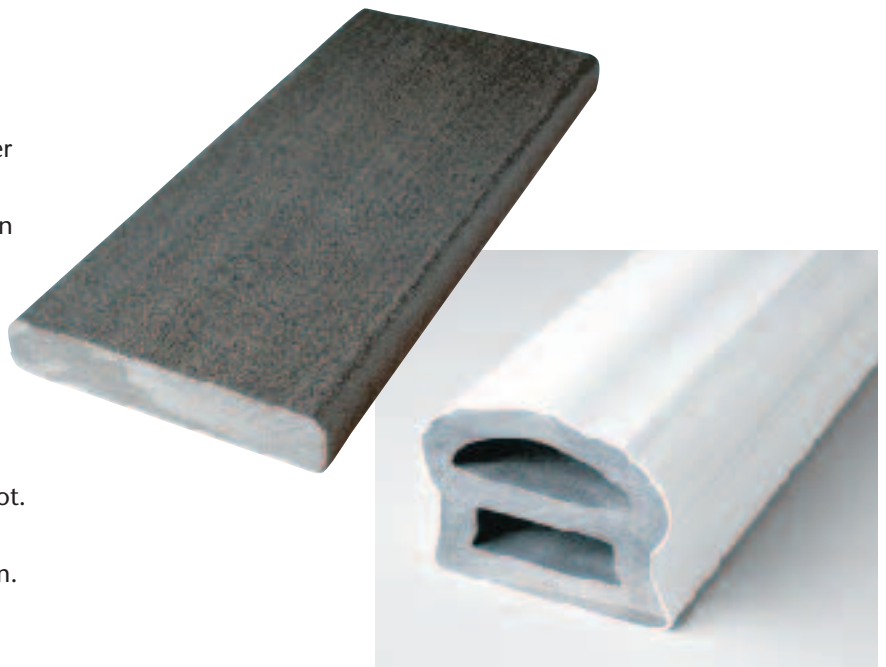
CPI Plastics Group, Mississauga, Ontario, 416/798-9333, www.cpiplastics.com.



Fiberon

Fiberon is available in Cedar and Pewter Grey. The decking has an embossed wood grain on one side and is smooth on the other. It comes in a nominal 5/4x6 and more closely matches the thickness of traditional solid sawn decking. Fiberon offers an attractive line of railings and accessories with a heavy-duty prefinished white coating. The decking runs about \$3.00 to \$3.25 per square foot.

Fiber Composites, New London, N.C., 704/463-7120, www.fibercomposites.com.



GeoDeck

GeoDeck by Kadant Composites is a hollow composite available in three profiles: 5/4x6 tongue-and-groove, 5/4x6 square-edge, and 2x8 heavy-duty plank. The manufacturer also offers a line of posts, railings, and balusters. All products are available in Cedar, Mahogany, and Driftwood and, according to the manufacturer, fade very little. This composite costs \$4 to \$4.40 per square foot for the 5/4x6 and about \$5.10 per square foot for the 2x8 plank.

Kadant Composites, Bedford, Mass.,
800/545-1710, www.geodeck.com.



A Couple of Alternatives

Watertight Aluminum Decking

Manufactured by FSI, *Lock Dry* is an aluminum extrusion that is watertight once installed, making it ideal for balconies and second-story decks with dry or habitable spaces below. The interlocking panels form a channel that carries water to the outside edge of the deck. FSI claims that joist spac-

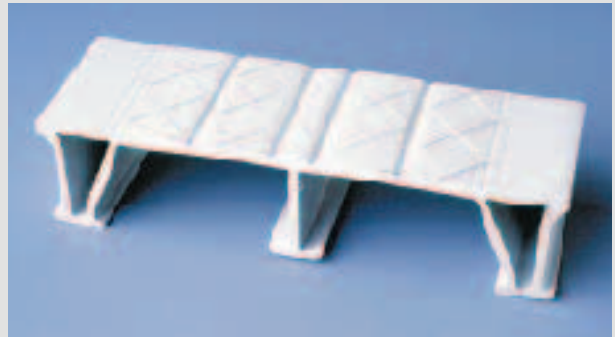


ings as wide as 30 inches on-center are possible. Because the product's coating is surface-bonded to the aluminum substrate, abrasions are more likely to show than on solid-colored products. FSI says the decking can easily be recoated if surface scratches become noticeable. Lock Dry goes for about \$7 a square foot.

FSI Home Products Division, Cullman, Ala.,
800/711-1785, www.lockdry.com.

Vinyl Option

Brock Deck is vinyl decking with a proprietary Clip Strip connection system that eliminates exposed fasteners. The specialized fasteners mean planning carefully to make sure you have all the components to complete the job. The manufacturer claims its decking is more slip resistant and cooler to the touch than that



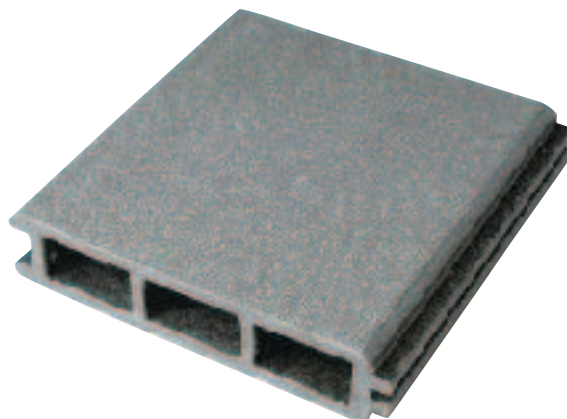
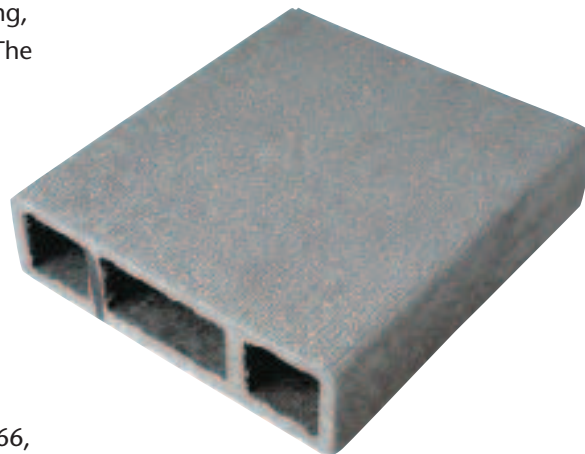
of competitors. Brock deck also manufactures several variations of steel-reinforced vinyl deck railing, designed to complement its decking product. Brock Deck runs about \$5 to \$7 per square foot.

Royal Crown Limited, Milford, Ind., 800/365-3625,
www.royalcrownltd.com.

Nexwood

Nexwood offers square-edge and tongue-and-groove decking, as well as a complementary line of railings and balusters. The square-edge decking is a nominal 2x6, and the T&G is nominal 5/4x6. Nexwood is one of a few manufacturers that makes a solid skirt board of the same maintenance-free material as the decking. Nexwood's installation instructions require predrilling and using screws to fasten the decking products. The tongue-and-groove product is fastened through the groove, resulting in a fastener-free surface. Nexwood is available in three colors: Driftwood Grey, Sequoia Red, and Sierra Brown. The price is about \$4.20 per square foot.

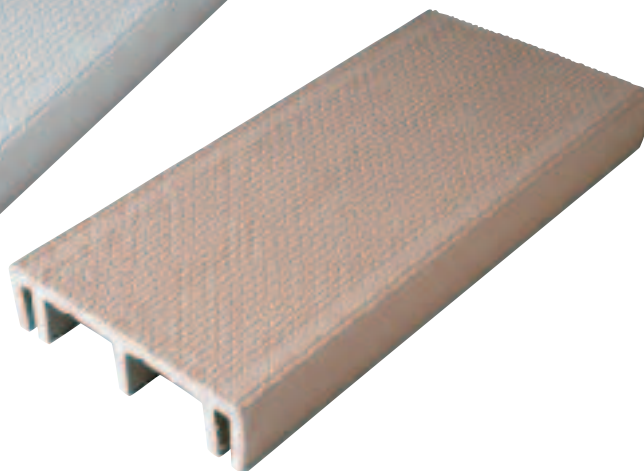
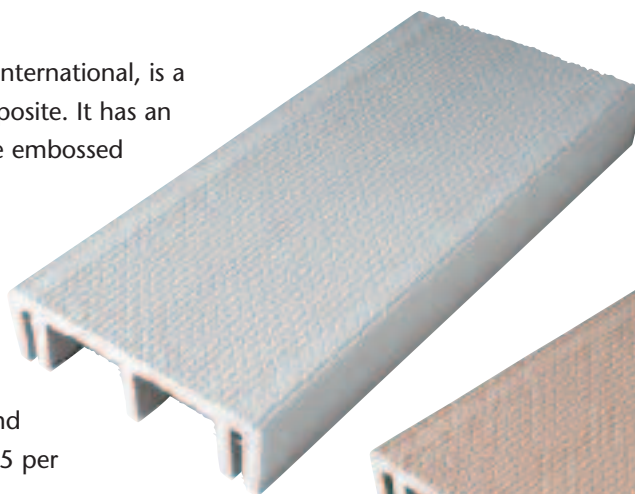
Nexwood Industries Limited, Brampton, Ontario, 888/763-9966, www.nexwood.com.



TecWood

TecWood, from Materials International, is a square-edge hollow composite. It has an unusual basket-weave texture embossed on the surface and comes in Driftwood and Sandstone. TecWood's manufacturer says that it will not fade and is cooler to the touch than competitive products. TecWood has a 2x6 profile and goes for about \$3.25 to \$3.75 per square foot.

Materials International, Inc., Atlanta, Ga., 800/256-8857, www.materialsintl.com.

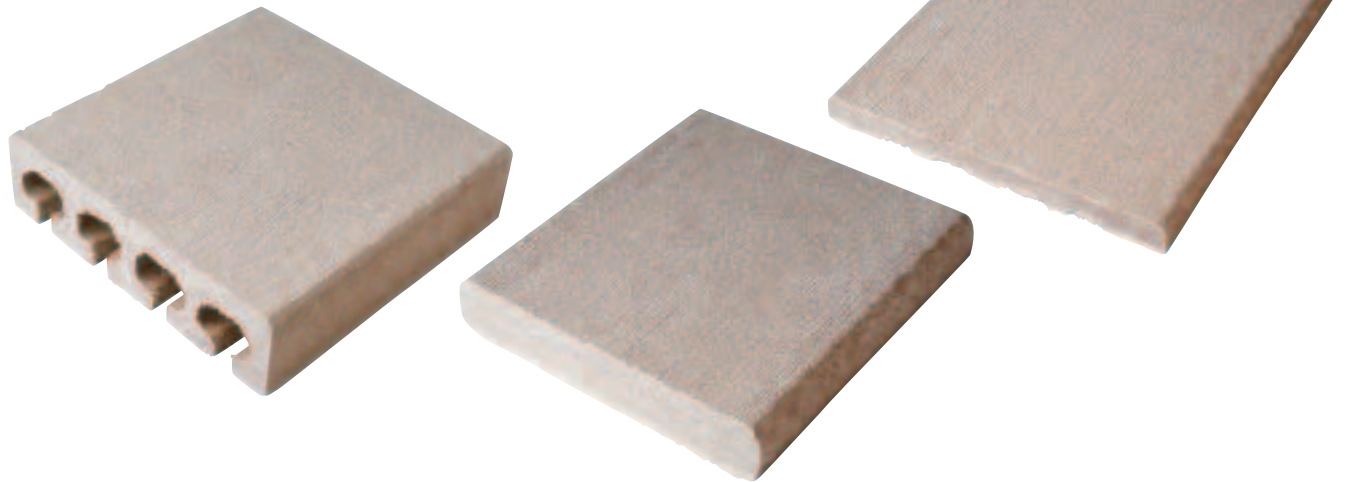


TimberTech

Timber Tech offers four profiles of decking: 2x6 tongue-and-groove, 5/4x6 square-edge, 2x6 square-edge, and a nonstructural decking cover. Its tongue-and-grooved product can be fastened through the groove to eliminate exposed fasteners. The 5/4 decking is a solid composite product, and the 2x6 is a hollow extrusion.

TimberTopper, the nonstructural deck cover, is approximately $\frac{3}{8}$ inch thick and is designed to cover and rejuvenate a sawn-lumber deck. TimberTech also offers a line of complementary railing parts. The 2x6 profile runs about \$3.35 per square foot, the tongue-and-groove about \$4, and the topper about \$2.50 a square foot.

TimberTech Limited, Wilmington, Ohio, 800/307-7780, www.timbertech.com.



Tendura

Tendura is a solid composite that breaks all the rules. It is more accurately described as a porch flooring than a decking. It is designed for covered applications because the T&G boards fit tightly together and have no means for water to drain through them. Tendura has a 3-inch coverage, compared to the more typical $5\frac{1}{2}$ inches. With its preprimed surface, it's the only composite meant to be painted. According to the manufacturer, Tendura won't rot and resists expansion and contraction better than solid sawn porch flooring. It has been used in the restoration of historic homes because its profile and appearance closely match the wood flooring it's replacing. You can expect to pay about \$6 per square foot.

Tendura, Troy, Ala., 800/836-3872, www.tendura.com.



Trex

Trex is the original recycled-content composite lumber. It has spawned a number of imitators, and many alternative decking options look a lot like



Trex. Trex is largely made from recycled grocery bags and waste lumber that, according to the company, would otherwise end up in landfills. The product is now offered in five colors: Natural, Winchester Grey, Woodland Brown, Saddle, and Madeira. It sells for about \$3 to \$3.35 per square foot.

Trex, Winchester, Va., 800/289-8739, www.trex.com.

WeatherBest

Louisiana-Pacific's WeatherBest decking has one of the more comprehensive hollow decking product lines. It includes 2x4 and 2x6 railings, balusters, and accessories in addition to two decking profiles. Decking is manufactured in a solid 5/4x6 and a hollow 2x6. All products have the same finish and, because they are the same composition, should weather uniformly. WeatherBest recently added Western Redwood, Driftwood Grey, and Pacific Cedar to complement its original Natural Pine shade. The 5/4x6 runs about \$3.50 and the 2x6 about \$4 per square foot.

Louisiana-Pacific Corp., Huntersville, N.C., 800/521-4316, www.weatherbest.lpcorp.com.



Xtendex

Xtendex hollow composite uses a unique hidden fastener system. A nylon hold-down engages the groove in abutting boards and is screwed to the joist. It works similar to the way a steel plate holds rails to a railroad tie. The edges of each board have a slight downward flare to help shed water. Xtendex also offers a complete railing system, two sizes of trim boards, and a 5-inch-square nonstructural column for railing or landscape applications. Xtendex claims to offer the most complete line of hollow composite products. Its decking in the nominal

5/4x6 size runs \$3.30 to \$3.75 per square foot, and the nominal 2x6 runs about \$4 to \$4.50 per square foot.

Composite Building Products International Inc., Barrie, Ontario, 877/728-3498, www.xtendex.com.

