

What's New in Decking and Railing

More eco-friendly choices, improved performance, and a broader palette of colors give deck builders new options

by Scott Gibson

Regardless of the material a decking product is made from — wood, composite, PVC, masonry, steel — the issues are similar. Homeowners want a custom look, preferably without a lot of maintenance, and builders are looking for high-quality products they can install quickly and profitably. Increasingly, consumers also consider a material's environmental impact. In response to preferences of homeowners and builders alike — and to address past problems and capitalize on current trends — manufacturers of decking and railing have introduced a number of products recently. Here are some of the latest innovations.

Recycled Ingredients Have Green Appeal

Green building has been getting a lot of publicity, and it's not hard to find decking manufacturers that use recycled materials in their products. Some composite-decking makers, for example, combine recycled plastics with wood flour culled from a variety of waste sources. But don't assume that because a product is a composite, it contains recycled plastic. Some manufacturers use some or all virgin plastic resin instead, to ensure consistency in their feedstock.



Figure 1. EcoShield tiles by A.E.R.T. may be installed over gravel or used to spruce up an existing deck.



Figure 2. Made from polyurethane resin and a power-plant by-product called fly ash, LifeTime Lumber's decking is said to meet California's strict fire codes.



Figure 3. Evolution Deck's 100 percent recycled galvanized-steel framing can support a variety of masonry deck surfaces for a fireproof assembly.

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Figure 4. McFarland Cascade's Terratec Naturals decking contains rice hulls, which the company claims reduces the chances of the decking supporting mold or mildew growth.

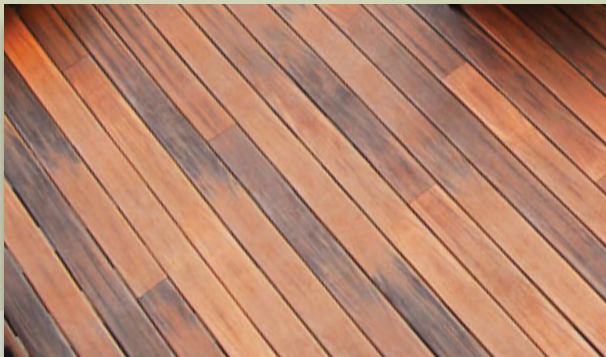


Figure 5. Fiberon's PermaTech composite-decking finish comes with a 10-year guarantee against scratches and stains.

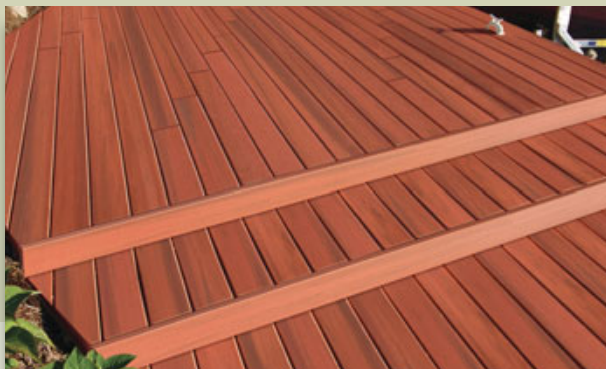


Figure 6. Universal Forest Products' Latitudes Capricorn decking is made with a co-extrusion process that's said to completely encase the wood fibers in plastic, making for a high resistance to stains.

Advanced Environmental Recycling Technologies (A.E.R.T.) is one of several companies that do use recycled plastic in their composite decking; it says it diverts more than 271 million pounds of waste from landfills each year — 30 percent of it post-consumer — and that its Moisture-Shield decking (866/729-2378, moistureshield.com) exceeds LEED requirements for recycled materials.

New offerings from A.E.R.T. include solid, reversible boards, which allow contractors to flip a scratched board over rather than replace it, and a nonplank option called EcoShield Deck Tiles (**Figure 1, page 1**). These tiles, which combine recycled wood and recycled polyethylene plastic into 1-foot and 2-foot squares, are snapped together to form a deck surface over a gravel or concrete base or on top of an existing deck. If homeowners want to change the pattern or take the tiles with them when they move, the surface can be taken apart.

Wood and plastic aren't the only recycled ingredients found in decking products. LifeTime Lumber (877/285-4338, lumlumber.com) markets deck boards made with polyurethane and fly ash, a by-product of coal-burning power plants (**Figure 2, page 1**). As much as 65 percent of the ingredients of the decking are recycled. The boards are inert, nonhazardous, and impervious to rot and insects, according to the manufacturer; plus, they meet California fire codes. The company recently announced an agreement with building products distributor BlueLinx Corp., which should make the decking more widely available in Arizona, Nevada, and Southern California.

Another recycled option is steel. Evolution Deck, an Ontario firm, uses 100 percent recycled galvanized steel to make structural members that can be used as the substrate for natural stone, concrete pavers, or tile (800/725-5228, evolution-deck.com). The system comes with a 30-year warranty, and at the end of the deck's life, the steel can be recycled — again (**Figure 3, page 1**).

Improvements in Composite-Decking Performance

The cellulose in conventional wood-plastic composites can absorb water or become stained, and under the right conditions, is susceptible to mold. Several manufacturers have tweaked their formulations to reduce the likelihood of those problems.

Earlier this year, for example, McFarland Cascade introduced Terratec Naturals (800/426-8430, mcfarlandcascade.com), a plastic composite made with rice hulls instead of wood (**Figure 4**). Rice hulls are more water resistant than wood fiber, making the decking less likely to stain or grow mold, according to the company. In addition, fungi and

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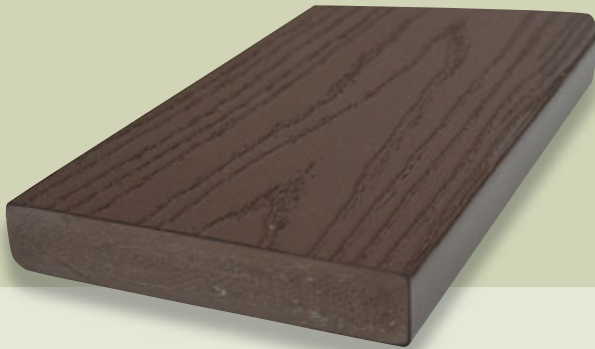


Figure 7. Thanks to advances in formulations, cellular PVC decking such as Azek can now be had in dark colors.



Figure 8. In a hybrid process, Royal Outdoor Products coats its traditional wood-plastic composite decking with PVC to seal out the elements.



Figure 9. A PVC-coated hybrid, XLM decking comes with a Class A fire rating that should allow its use in wildland-urban interface fire zones.

insects find the hulls essentially inedible, which eliminates the need for biocides or chemical preservatives. That and the fact that rice hulls are a recycled food by-product give the decking a good green-building case, too.

Fiberon attacked the problems associated with conventional wood-plastic composites differently, with its Horizon decking (800/573-8841, fiberondecking.com). Around a core of traditional wood-flour-and-plastic composite is a top coating called PermaTech, which the company describes as a proprietary, nonplastic material with very high stain, fade, and scratch resistance (**Figure 5, page 2**). PermaTech comes with a 10-year guarantee.

A third company with a new approach is Universal Forest Products. Like many other composites, its Latitudes Capricorn line of decking (877/463-8379, latitudesdeck.com) is made with wood fiber and high-density polyethylene. The difference, the company says, is that a co-extrusion process, developed by the Strandex Corp., encases each fiber of wood in plastic, making the decking “virtually impervious” to stains (**Figure 6, page 2**).

More Cellular PVC

Cellular PVC is more expensive than composite decking. On the plus side, it's lighter — about the same weight as softwood — and it can be cut and molded in much the same way as wood, so it feels familiar to contractors. Also, it has low water absorption, for good stain resistance. Several companies (including Trex) have added cellular PVC products to their offerings.

Manufacturers of cellular PVC say it holds color better than composites. Because of PVC's high coefficient of expansion, manufacturers have tended to avoid darker hues, but new formulations are said to address this concern. Azek (877/275-2935, azek.com), for example, introduced two dark colors this year in its Azek Deck Terra Collection (**Figure 7**). TimberTech also added a new color, desert bronze, to its XLM line (800/307-7780, timbertech.com).

The following decking brands are new to the cellular PVC market:

- EverNew LT (CertainTeed; 800/233-8990, certainteed.com)
- Novation (Royal Outdoor Products; 800/488-5245, www.novationdeck.com)
- Sensibuilt (Fiberon; 800/573-8841, fiberondecking.com)
- WeatherReady Passport (Gossen Corp.; 800/558-8984, gossencorp.com)

As the market has gotten more crowded, some cellular PVC decking makers have introduced new features to distinguish their products. Fiberon's decking, for example, has a top coating that's designed to resist chalking and

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Figure 10. To minimize the effects of sunlight, Gossen is using a dual-extrusion process that allows darker-colored PVC-coated decking.



Figure 11. Wood treated with Ecolife, by Viance, can be used in contact with aluminum flashing.



Figure 12. L3 is a nonmetallic wood preservative made by Arch Chemicals. The manufacturer touts its ability to be stained or painted.



Figure 13. Osmose claims that although its MicroPro wood treatment contains copper, the formulation is no more corrosive than CCA.

fading, according to Chris Beyer, the company's vice president of marketing, and carries a 10-year warranty against staining and fading. Royal Outdoor Products uses a co-extrusion process in which a cellular core is encapsulated with solid PVC (**Figure 8, page 3**).

Similarly, TimberTech promotes a solid PVC cap on its XLM planks that enhances scratch, stain, and mildew resistance. The decking also has a Class A fire rating that makes it suitable for use in fire-prone areas of California (**Figure 9, page 3**). Gossen has added heat and UV inhibitors in a reflective cap on its decking, using a dual-extrusion process, and plans to debut a new color this fall (**Figure 10**). Other companies have added hidden fastener systems, matching trim and fascia boards, and rail systems.

Wood

While manufacturers of composites, cellular PVC, and the like have found a variety of ways to improve and expand their offerings, the wood industry hasn't been standing around waiting to have more of its market share gobbled up. Instead, it has been coming up with chemical treatments that are more varied and more environmentally friendly.

Compatibility with flashing and fasteners is key. Both ACQ and CA treatments, the most common replacements for CCA, contain a good deal of copper, which can be brutal on fasteners, joist hangers, and other metal connectors.

A variety of alternatives have entered the marketplace. For example, Viance's Ecolife decking (800/421-8661, treatedwood.com) is treated with a nonmetallic chemical that can be used in direct contact with aluminum flashing (**Figure 11**). Chris Kollwitz, the company's director of marketing, says Ecolife performs as well as or better than conventional wood-plastic composites. Ecolife recently won certification from the National Association of Home Builders Research Center as a green building product, allowing it to earn points under the National Green Building Standard rating system.

Arch Chemicals (678/627-2000, archchemicals.com) also has a nonmetallic treatment for wood, marketed as Wolmanized L3 Outdoor Wood. L3 is a carbon-based formulation the company says is no more corrosive to metal fasteners and flashing than untreated wood (**Figure 12**). One downside to L3 is that it's not rated for ground contact, so Arch makes a version containing copper for members such as posts.

Osmose (770/233-4200, osmosewood.com) followed a different route in overcoming the corrosion problem, with a treatment it calls MicroPro (**Figure 13**). Marketed under several brand names, the wood is treated with very small

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Figure 14. Thermally modified wood, such as this by Cambia Wood, takes on a rich brown color from the manufacturing process.



Figure 15. Gossen's railing-system balusters are held in place with proprietary clips to speed installation.



Figure 16. A vinyl railing by CertainTeed, Edgewood is claimed to have a surface that mimics painted wood.

particles of ground copper that are dispersed in a carrier. The company claims that in addition to being less corrosive to flashing and fasteners, MicroPro-treated wood is lighter in color than some of the alternatives, opening up more options for painting and staining. The company says the wood can be placed in direct contact with aluminum and is no more corrosive than the old CCA-treated wood. (Osmose and Viance are currently embroiled in a court case that originated with Viance's suggestions that micronized-copper treatments are ineffective. Osmose disputed the claims and filed suit, and Viance counter sued. For more information about the lawsuit, see *Decking News* on page 12 or deckmagazine.com/article/243.html.)

Another entry into the market is thermally modified wood (**Figure 14**). Although distribution is still limited, several manufacturers are in play. The idea is that heating wood above 400°F alters its chemistry so there's nothing that microbes like to eat. From a green perspective, it's a chemical-free way of preserving wood, but it does entail some cost in embodied energy. Other benefits touted by manufacturers include rot-resistance throughout — as opposed to pressure-treated wood, which often has untreated areas in the middle — and greater stability. Current product lines focus on decking and railing components. Major players include Bay Tree Technologies (816/581-6190, purewoodproducts.com), Cambia Wood (866/960-9663, cambiawood.com), and Radiance Wood Products (866/318-9434, radiancewood.com).

Railing Innovations

In railing news, manufacturers have introduced additional styles and mix-and-match options for homeowners, and much composite and cellular PVC decking is now available with color-matched rails, post sleeves, and a variety of baluster types. Plus, several manufacturers have created design details that make railing simpler and faster to install.

Gossen's Passport railings feature a clip system for balusters that works on both rake and straight runs to make installation less complicated (**Figure 15**).

GAF (866/322-7452, gaf.com) has added metal balusters to its RailWays Railing Collection that use the UniBall QuickSnap mounting system. Components are universal, so customers can mix and match pieces of different styles or colors. "Everything fits on the same platform," says marketing director Todd Christiansen. A compatible lighting system, launched in late 2008, conceals wires in hollow rails.

CertainTeed introduced Edgewood vinyl railing (**Figure 16**), which has a surface texture designed to look more

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Figure 17. With the goal of fast installation, Royal Outdoor Products' railing uses a fastener-free connection between the balusters and the railing.



Figure 18. For commercial jobs, TimberTech offers an ADA-compliant handrail system for decks.



Figure 19. Reserve, a railing line by Azek, includes an over-the-top railing as well as more traditional styles.

like painted wood than standard vinyl. Also, CertainTeed added to its Panorama railing line a colonial baluster designed to look like a turned spindle.

Trex completed an overhaul of its Artisan composite railing line in 2009, increasing the number of baluster styles and allowing consumers to mix and match components (800/289-8739, trex.com). To make installation faster and easier, balusters are attached to rails not by conventional fasteners but by means of spacers with pre-punched holes. The system is "tried and true and repeatable," says senior product manager Paul Recko.

Royal Outdoor Products also uses a fastener-free connection between balusters and rails in its railing line (**Figure 17**). The all-vinyl rail sections are color matched to Novation decking.

TimberTech's railing options now include an ADA-compliant handrail that can be mounted to an existing railing or directly to a wall (**Figure 18**). The company also introduced a surface-mounted post connection that can be used on wood, composite, vinyl, and concrete surfaces.

Azek's railing line now includes three styles, one of which, Reserve, is designed so that rail sections can be run over the top of the post without the use of a cap, for a cleaner look (**Figure 19**).

Choices, Choices

A proliferation of new products adds complications as well as choices for deck builders. It's a good idea to participate in trade shows, online forums, and local business association meetings and ask other deck builders what they've tried and what they like.

Mick Feduniec, whose Charlotte, N.C.-area company builds up to 200 decks per year, points out that the wide availability of information about building products can create problems. Some decking is available only regionally, for example, so a product a customer hears about on the West Coast might not be found in North Carolina. And sometimes, he says, customers overrule his suggestions and insist he use products that they've come across but he hasn't tried before. If the manufacturer goes out of business or the product doesn't live up to its billing, Feduniec is stuck. "It's not the greatest situation," he says.

Feduniec prefers to use products from larger manufacturers that have a better chance of staying in business over the long term. He also likes to work with companies that show an interest in what he has to say, offer tours of their plants, and otherwise stay connected with what's going on in the field. ♦

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