



Waterproof Decking

Create cost-effective dry space underneath your decks with this new breed of decking

by Dave Lombardo

Based in two metro areas, my company builds approximately 160 outdoor living projects per year, ranging from simple, grill-holding 10x10 PT wood decks to many-thousand-square-foot oases with every currently popular design element possible. What many of these projects, regardless of complexity, have in common is the homeowner's desire to have a dry space underneath the deck.

Until recently, the challenge has been to successfully deliver a repeatable, proven dry space that offers long-term

client satisfaction. We've tried all sorts of approaches over the past 20 years, most of which suffer from the same premise: They allow the water to travel through the decking first and then try to divert the water away from the framing underneath.

To manage the water, we've trained crews to deal with rubber, vinyl, and aluminum below-decking and ceiling contraptions, but all of these systems have short-term and long-term faults: catching and trapping dirty water in hidden areas; encasing the framing or the

underside of the decking with moisture, heat, and sometimes even ice; and creating habitat for animals and their excrement, hair, nests, food, and debris. Not only that, most of these systems also void most composite-decking product warranties. Finally, we've found that all of these systems eventually leak.

An Upsell Opportunity

Despite these difficulties, customers are increasingly interested in creating dry space underneath their decks, and we're happy to meet that demand. Elevated

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Figure 1. Adding dry space underneath an elevated deck is an easy upsell, whether the deck is a relatively small one (above) or a larger, multi-level structure (left). Customers can double their valuable outdoor living space with only a minimal increase in the total project budget.

decks that are higher than 6 feet above grade currently account for more than two-thirds of our projects (deck builders in our area have a hard time competing against hardscape options for low-level decks).

This presents an opportunity to offer a much greater value proposition than any other product category or trend on the market. I explain it this way to my clients: “I can double your functional space (a 100% gain in square footage) for only about 25% more money than

it would cost to build the typical composite deck we have discussed.” Almost invariably, a light bulb clicks on in the homeowner’s mind; getting twice the square footage of usable space for only a quarter more money is a strong sales pitch. And, by the way, this 25% includes a fair profit margin for the contractor.

This is an easy upsell, regardless of the size of the project. We’ve added dry lower areas to decks ranging from modest, 10-foot-by-10-foot platforms to mega-structures, and for a wide range of

purposes, including storage, work sheds, social and entertainment areas, outdoor retreats from foul weather, and open, screened, and closed outdoor rooms and porches. These are features that our clients want, especially if it costs them only 25% more (**Figure 1**).

Keep the Water Out

Here is where technology has stepped in to lend a hand. Instead of trying to capture the water after it drains through the decking, now there are several manufacturers

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Figure 2. Green Bay Decking's DuxxBak (above left), Dekmax APS aluminum decking (top right), and Gorilla Deck vinyl decking (above right) all feature an open rib profile and an overlapping interlock joint design. Various trim pieces—such as end caps and L-flashings—are used to finish the open edges of the decking once it has been installed.

offering decking that prevents the water from ever penetrating the deck surface. These products look great while creating a truly dry space beneath the deck, meeting the needs of both the installer and the consumer.

One of the pioneers of this type of decking is Gorilla decking, from Florida-based Homeland Vinyl Products. Gorilla decking is made with PVC (the company's roots are in the vinyl-siding industry) and is one of several waterproof decking products that have an open-rib profile. This type of decking features an overlapping interlock joint design and a channel below to carry any water that gets through the top surface to the

edge of deck. End caps are used to finish the edge of the decking (**Figure 2**).

We were eager to try Gorilla decking when we first discovered it four or five years ago, thanks to our frustration with “let the water through first” products, and we eventually installed it on five projects with moderate success.

Despite our initial high hopes, the open rib profile presented a challenge during installation, as the hollow spaces made it difficult to prevent leaks at the ledger board. And some of our customers objected to the hollow sound and the squeaking of adjacent boards that occurred when walking on the deck. Apparently, the hollow profile allows

the product to flex, causing boards to move against the still-stationary interlock profiles of adjacent boards.

Eventually, we had to replace three of the five installations under the manufacturer's warranty, though not because of leaking or squeaking, but because of color fade and chalking.

Two interesting variations on the open-rib waterproofing concept are a pair of aluminum decking products: LockDry, made by Atlanta-based Nexan Building Products, and Dekmax APS, which is made in Utah. While I haven't used either of these products, I understand that both do a good job of capturing and diverting water off the deck. Based on

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Figure 3. Admiral SpaceMaker is a capped solid-core plank with a built-in silicone edge gasket (center). Before the fasteners are driven into the joists, a BoWrench (cepcotool.com) or even a flat-head screwdriver can be used to pry the decking in place, which compresses the gasket (top). The installed decking also creates a bright ceiling for the space underneath (bottom).

our experience with Gorilla decking, I think their open rib profiles may create waterproofing challenges at the deck ledger area. Because they are made from aluminum, both should also prove to be durable. Pinging sounds from rain dripping off the roof and metallic noises while people are walking around or moving furniture are potential complaints.

Another promising open-rib option is Green Bay Decking's DuXXBak water-shedding product. This is an uncapped composite product made in Wisconsin with an interesting wood-flour mix. As with the other open-ribbed products, detailing the deck ledger area to prevent water penetration will be challenging.

The waterproof decking that I'm most familiar with is Admiral's SpaceMaker Outdoor Flooring (admiral-spacemaker.com), a product launched about three years ago after several years of development. Unlike the open-rib planks, this is a solid-core product with a specialized tongue-and-groove edge profile, a PVC core, and a surrounding ASA (acrylonitrile styrene acrylate) cap coat, giving these boards performance characteristics that are similar to those of the capped composite and solid-PVC decking offered by the major manufacturers. Between boards is what the company calls a "Super Seal," a type of gasketing system that has proven to be effective in preventing water from leaking through the deck surface (**Figure 3**).

We've installed SpaceMaker on 14 projects to date, with no callbacks. Besides its reliability, one of the reasons we like it so much is that it installs and acts just like regular composite decking. The boards simply push together, compressing the seal, and then standard deck screws are installed through the screw ledge (on the groove side of the profile). The screws are hidden by the next board and remain dry their entire life. There are no special end caps to install, and because the boards have a solid core, no water can get trapped inside, a potential problem with

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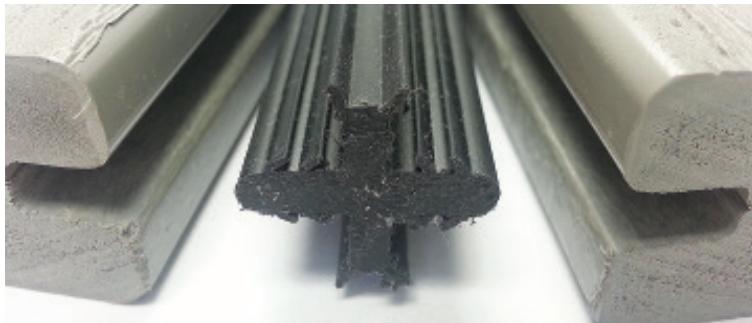


Figure 4. Dexerdry is a ribbed proprietary polymer extrusion that fits in the slotted edges of certain types of composite decking to create a watertight seal between the boards. Because the inserts use the space normally reserved for hidden fasteners, the decking must be installed with face-screwed fasteners. Inserts are currently available for Deckorators, Azek, and TimberTech decking, though some builders report that they have successfully used Dexerdry with slotted ipe decking too.

New waterproof decking options will lead to significant growth in demand for dry under-deck spaces.



Figure 5. A SpaceMaker deck is ready for phase two: a patio and hot tub on the lower level. Deck framing needs to be sloped with at least a $1/8$ -inch-per-foot pitch for drainage, a consideration when you're retrofitting an existing deck with a waterproof decking product.

open rib profiles. The decking doesn't leak or squeak, and we haven't experienced any color fading problems.

I haven't mentioned sheet membrane products such as Duradek or waterproof deck-tile installations, because to my mind those waterproofing methods require specialized subs and so fall into a different category. But there is one other interesting option—called Dexerdry—that works with certain brands of standard composite decking and can be installed by any deck builder. Dexerdry is a rubberized gasket that slips into grooved deck boards prior to installation, so the decking is then fastened to the framing with surface screws rather than hidden fasteners (Figure 4).

A Growing Market

I anticipate that these new waterproof decking options will lead to significant growth in demand for dry under-deck spaces. Adding to this growth will be the high percentage of existing-deck replacements, which currently make up between 50% and 70% of our business. In fact, we've become adept at dropping a deck-frame elevation (if the frame is good enough to salvage) to meet the required $1/8$ -inch-per-foot pitch requirement typical of dry-space products (Figure 5).

Currently, about 10% of our projects include a dry space under the decking, either in part or under the entire decking surface. I expect that this will easily double in the next three to four years, possibly growing eventually to as much as a third of our deck projects. Being able to deliver repeatable and proven dry under-deck areas that double a homeowner's outdoor living space for only 25% additional cost adds up to a better value for homeowners and greater revenue and profits for contractors. ♦

Dave Lombardo is founder and owner of American Deck & Patio, which has served the Baltimore and Washington-metro markets since 1989.

PHOTO: AMERICAN DECK & PATIO (BOTTOM)