

Under-Deck Drainage Roundup

A variety of products are now available to create a dry living space below the deck. Which one is right for your job?

by Charles Wardell

Judging by the number of manufacturers who are now offering them, under-deck drainage systems have become a very popular upgrade. These products capture water and divert it to a gutter at the deck beam or the outer band joist, leaving the space below the deck dry and available to use either as outdoor living space or for storage.

Still, many deck builders report that

most of their clients don't know that under-deck drainage is even an option—though once it has been presented to them, a high percentage ask to add it to their project. “It's a great seller,” says Tyler VanKatwijk, of Artistic Decks, in Bellingham, Wash., whose second-story decks all include drainage. “It rains a lot here, and this gives the homeowners a patio they can use even when it's wet outside.”

Although some builders use pond liners to custom-cut their own drainage systems, most install a manufactured product. There are two main categories of drainage systems available, depending on whether they're installed from above or below the joists. Below are discussions of each type of installation, followed by a selection of products that fit in each category.



Above the Joists

These products consist of a rubberized membrane that drapes down into each joist bay from above. The membrane pieces are shaped so that they can be stapled to the top of the joists, yet hang lower at one end of the joist bay to encourage drainage. When the joists cantilever past a beam, separate pieces are installed on each side of the beam, with each sloped to direct water to a gutter on the inner face of the beam.

On an existing deck, the obvious complication is that the decking needs to be removed to install the membrane. The big advantage to this kind of system, however, is that you can put any kind of finish ceiling on the underside of the joists, making it a good option for customers who want a wood ceiling.

Another advantage, according to Jerry Herbert, of Colorado Deck Drain Experts, in Brighton, Colo., who has been installing drainage systems for 18 years, is that the framing stays dry. “The average deck around here lasts 16 to 22 years, but with this system a deck can last three to four decades because the framing never gets wet.”

Don't make the mistake, though, of assuming that because the joist bays stay dry, the area under the deck can be treated as a covered porch—at least when it comes to the code. For example, wiring and fixtures would still need UL-approval for use in wet locations. As code expert Glenn Mathewson notes, deck-drainage products are basically storm-drainage systems, not roof systems.

Installed prices vary widely depending on the product (custom or off-the-shelf) and market. VanKatwijk is quoting prices of around \$10 per square foot of deck area for the drainage system only. Herbert usually figures \$25 to \$30 per square foot, which includes the drainage system and a stained tongue-and-groove pine ceiling below, but not any electrical work or the removal and reinstallation of decking on an existing home.

Products that are installed above the joists include DEK Drain and Trex RainEscape.

A DEK Drain

Although DEK Drain comes in above- and below-joist varieties, a company rep told us that its Topside product accounts for 98% of sales. A flashing strip is installed at the ledger board, and a rubber membrane is draped over joists and sloped toward a gutter attached to the support beam. Four-inch-wide cap strips are installed over the membrane at each joist and serve as gaskets. The panels are temporarily fastened in place with 1/2-inch staples, then permanently secured by the deck boards. Cost is \$5 to \$6 per square foot. DEK Drain, 866.335.3724, dekdrain.com

B RainEscape

Trex's RainEscape includes plastic trough sheets and downspouts, as well as a special flashing tape and caulk. The trough sheets are stapled to the top of the joists and drape between them. Water falls between the deck boards into the troughs, and drains to downspout funnels at the end of each joist bay. Troughs can be cut with a utility knife and secured with staples until the deck boards are in place. The flashing tape and caulk are used to waterproof the ledger area, as well as the seams between trough sheets and around railing posts. Cost is \$4.50 to \$5.50 per square foot. Trex, 720.348.1385, trexrainscape.com

Below the Joists

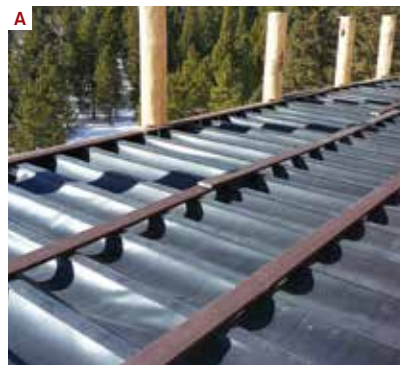
These products consist of metal or vinyl panels retrofitted to the bottoms of the joists of an existing deck. In most cases, panels attach to a wood or metal carrier frame that is fastened to the underside of the joists and installed so as to provide a slope, though one product actually wraps around the bottoms of the joists and extends across the joist bay somewhere in the middle of its depth. For drainage, the panels typically slope

to a gutter installed at the deck beam.

These products are perfect for retrofits, having the obvious advantage that the existing deck boards need not be removed. Costs are also generally lower. Herbert, who installs both types, says he usually quotes an installed price of \$17 to \$20 per square foot, making this an affordable option for a wider range of customers.

Regardless of system type, debris that falls between the deck boards will need to be cleaned out periodically—once a year or more if the deck is surrounded by trees that drop a lot of debris, less often if it's out in the clear. Cleaning is usually a matter of using a hose to spray water into each joist bay. The panels on some below-deck systems can be removed for cleaning.

If the conversations we've had with manufacturers are any indication, this is a very competitive product category, with much of the marketing focused on the supposed weaknesses of competing products. The fact is that there are a lot of variations, so we suggest you research



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the products carefully before choosing one. Here are a few systems that we found.

C UnderDeck

With this system, PVC rails are nailed to the sides of each joist 1 inch to 1 ¼ inches up from the bottom. (The measurement varies from one end to the other to create a drainage slope.) The rails support 42-mil-thick vinyl ceiling panels, which are cut ½ inch wider than the joist bay to create a shallow arch when pushed into the bay. Gutter pieces are attached to the base of each joist and around the perimeter, while water diverters keep water out of the house frame. The panels work with joist spacing from 5 to 24 inches on-center. Cost is around \$7 per square foot. FehrMark, 888.353.3347, underdeck.com

D DrySpace

With TimberTech's DrySpace, U-shaped brackets are slipped over the bottoms of the joists so as to create a slope of ⅛ inch per foot (2 inches over 16 feet) for drainage into a vinyl gutter. Channels on each side of the bracket hold vinyl ceiling sheets in position between the

joists, while additional F-brackets support the sheets at the ledger. Panels have a V-shaped profile that directs water to the gutter. The product works with decks with 12- or 16-inch on-center joist spacing and comes in one color: bone. Cost is about \$4 per square foot. TimberTech, 800.307.7780, timbertech.com

E UnderShield

CertainTeed's UnderShield Water Diversion System consists of 6-inch by 16-foot vinyl panels that are retrofitted via a concealed clip-and-grid system to the underside of the joists (also see photo on page 34). The grid creates the needed pitch and allows the panels to be installed either parallel or perpendicular to the home. Panels are available in chamfer or beaded styles and in three colors: white, gray, and wicker. Stainless steel hardware is included. It sells for between \$6 and \$7 per square foot. CertainTeed, 800.233.8990, certainteed.com

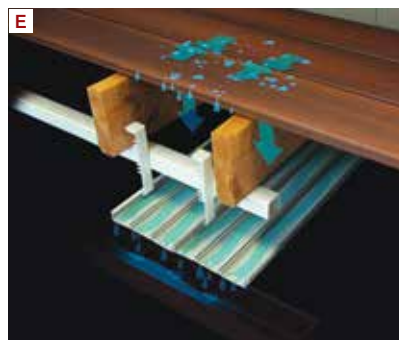
F Zip-UP UnderDeck

This product is installed in two layers. First, "pitching rails" (spacers, basically)

of varied widths are installed perpendicular to the joists to create a slope, then "main rails" (or brackets) are installed over the spacers parallel to the joists. The main rails support 1-foot-wide vinyl panels that form the visible ceiling. Main rails and panels are available in 12- and 16-foot lengths, in three finishes and in two colors. The product gets a Class A Fire Rating and has passed Dade County, Fla., standards for hurricane testing. Cost is \$7 to \$8 per square foot. MP Global Products, 888.449.4787, zipupceiling.com

G DuoDeck

DuoDeck is a simple system in which Deck Brackets, which look like joist hangers, slip over the undersides of the deck joists, but hang below the joists to support pieces of 2x2 lumber. The 2x2s create a framework for the ceiling; the brackets are installed so as to create a proper drainage pitch. Corrugated PVC panels attach to the underside of the framework and direct water to the edge of the deck. Cost is \$2.50 to \$4.50 per square foot. Palram Americas, 800.999.9459, palramamericas.com



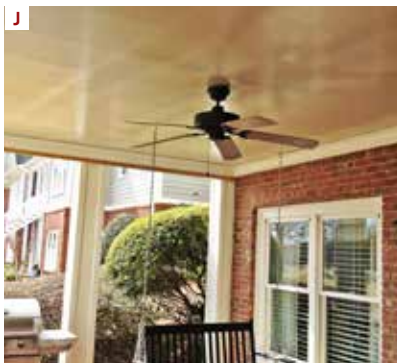
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H RainTight

With the RainTight Under Deck system, treated wood sleepers are fastened to the underside of the deck frame, followed by 11-inch-wide aluminum panels. The panels have a 1-inch depth, allowing water to flow beneath the sleepers to the gutter. Panels are custom-made for each particular job and come with a baked enamel finish. The system also includes a custom-made seamless gutter. Cost is around \$7.50 per square foot. RainTight, 877.865.9346, raintightdecks.com

I Under Deck Oasis

The Under Deck Oasis system consists of aluminum panels suspended from metal carriers attached to the joists. Aluminum G-channels support the panel ends closest to the house, while trim pieces finish off the other three sides. The finished ceiling is about 2 inches below the deck at the ledger, then slopes $\frac{1}{8}$ inch per foot toward the beam. The panels clip into the carriers rather than using fasteners. Solid and wood-grain colors are available,



with a smooth or embossed finish. Cost for the materials is \$6 to \$9 per square foot. Under Deck Oasis, 616.425.8188, underdeckoasis.com

J DRY-B-LO

With the DRY-B-LO system, 16-inch-wide, 22-gauge interlocking galvalume metal panels are supported at the ends and sides by a perimeter gutter, and at mid-span by galvanized metal hooks attached to the joists above. The manufacturer says that it's very easy to install and that the panel thickness and clips eliminate sagging. Panels have an embossed texture and come in three colors: pearl white, light stone, and dark bronze. The company is targeting the high-end market and works only with authorized installers, though it encourages deck builders to get in touch about becoming an installer. No material costs are available, but installed cost to the homeowner is \$15 to \$20 per square foot. 770.521.5404, dry-b-low.com

Other Deck-Drainage Products

There are also a couple of systems that use a different approach from the ones above. They include Dexerdry and DryJoistEZ.

K Dexerdry

Rather than catching rainwater below the deck boards, Dexerdry prevents water from ever getting there. It consists of a flange that fits into the grooves meant for hidden fastener clips at the edges of



PVC or composite deck boards, thus creating a waterproof surface. The flange is tapped into place with a rubber mallet, and automatically spaces the boards. Of course it also prevents you from using hidden fasteners, so a screw-and-plug fastener like Cortex is recommended. The company says that the seal will withstand a 3,000-psi power-washing. Figure around \$4 to \$5 per square foot of deck area. Dexerdry, 732.551.9969, dexerdry.com

L DryJoistEZ

DryJoistEZ is unique in that it provides a finish ceiling and structural support for the decking. It consists of 6-inch-wide, 24-foot-long extruded aluminum structural planks, each of which includes a 2-inch-high raised aluminum joist. The planks will span up to 6 feet, eliminating wood joists. The ledgers, bands, and structural beams can be trimmed after the deck is done to create a coffered-ceiling look. Deck boards are fastened to the aluminum joists with hidden fasteners and self-tapping metal screws. The company also makes a post support bracket that locks into the metal joists, allowing rail posts to be installed after the system is in place, with no need for flashing. Price is around \$13 per square foot—more than some other systems, but you save on the cost of joists. Wahoo Decks, 877.270.9387, wahoodecks.com

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