UNDERDECK

Under-Deck Drainage Systems

Double your clients' outdoor living space by keeping the area below their deck dry

by Mark Clement

Building a deck creates two distinct spaces. Topside, gleaming deck boards and guardrails invite customers to enjoy the outdoors. But if a deck is far enough above the ground, beneath all the pomp and pizzazz exists another, nearly accidental, outdoor living space. And while its creation may have been unintended, it can be awesome real estate if you trick it out.

Under-deck drainage enables all kinds of upgrades by shielding the area below a deck from rain and snow and diverting the water into a gutter and downspout. All the systems discussed in this article offer a warranty against leaks. Installation methods differ, however, and it's important to consider how they affect not just the underside of the deck but its entire design.

The nationally available systems can be divided into three basic categories: waterproof sheets that fit over the joists before the decking goes down, systems that affix to furring strips below the joists, and between-joist systems.

SHEET SYSTEMS

Dek Drain and RainEscape are examples of sheet systems. Both companies claim their products are entirely waterproof.

The two products work on the same principle. After flashing against the house, you roll a membrane across the tops of two joists to create a long trough that's pitched to drain at the front of the deck into a gutter and downspout system. Adjacent rolls of membrane lap at the tops of the joists and are capped with more membrane or peel-and-stick tape. Deck boards are screwed to the joists through the membrane, which self-seals around the fasteners.

Because sheet systems are typically only 4 inches or so in depth, you can run wire and junction boxes underneath the troughs. Then you can add a ceiling of your choosing — beadboard, for example. Another benefit to using this method is that the framing is protected from decay, as the systems keep everything below the deck boards dry.

Still, before selecting this type of drainage system, you should keep a few things in mind. Mid-span blocking has to be installed so that the troughs run above it. You can't use blind fasteners that install from the bottom of the deck. And deck boards can't be straightened by driving a chisel into the joist as a lever or by using a BoWrench.

Dek Drain

866/335-3724

dekdrain.com

Dek Drain is made from black rubber that the company says remains stable during temperature changes and isn't affected by leaf acid, acid rain, or salt spray in coastal applications. Direct sunlight (not that much will reach under the deck boards) is no problem, according to the company.

Dek Drain is made from a chemical- and sunlight-resistant rubber; the system drains into standard K-style gutters.

Installation requires no caulk, which feature most deck builders will welcome. Post penetrations are flashed with peel-and-stick membrane or butyl tape.

Dek Drain ships nationally and comes with a transferable, albeit limited, lifetime warranty.

RainEscape

877/348-1385

rainescape.com

RainEscape differs from Dek Drain in three main ways. For one, RainEscape is made from high-density polyethylene rather than rubber. Also, it's brown instead of black, making it less noticeable from below should there be no ceiling installed under the deck. And it drains into RainEscape's preformed scuppers that send the water straight down into a gutter.

The company's Web site shows caulk being used to seal the laps and caps, but RainEscape's butyl peel-and-stick tape is less messy and goes in faster. You can use it for wrapping posts or other penetrations (say there's a gas line plumbed through a joist bay for an outdoor kitchen assembly) so they drain into the troughs.

RainEscape's brown polyethylene fabric drains into a proprietary gutter system.

CEILING SYSTEMS

The panels of ceiling systems hang from vinyl rails or 2-by sleepers that are attached to the bottom of the deck. They create a finished ceiling at the same time they waterproof the space underneath. It's a one-shot deal, but you have to like the look of the ceiling.

Unlike sheet systems, ceiling systems don't keep the framing dry. This is something to consider if you want to add overhead electrical devices — say, lights or fans.

DrySnap

800/523-8852 ext. 125

drysnap.com

The key to the DrySnap installation is properly laying out and installing the DrySnap joist brackets and pitch spacers on the underside of the deck joists. It takes a little bit of layout math to evenly space the joist brackets along the joists. As you move out from the house, you create a pitch by adding spacers to the joist brackets. Once those are installed, you mount the ceiling panels on the bracket system. The result is a flat, slightly pitched vinyl ceiling with a beadboard appearance.

DrySnap's name is apropos because the whole ceiling pretty much snaps together. The ceiling panel layout begins with a starter strip and finishes with an end cap. You need a rubber mallet to tap the panels into place and make sure they lock down, but that's the only tool you need that you don't already have in the truck.

DrySnap's installation instructions call for the ledgerboard flashing to extend 8 inches out from the house — easy if you're building a new deck. For retrofits, the company suggests using a peel-and-stick membrane detail on the ledger to direct water into the system and guard against back-splashing. Because vinyl is stiff when cold, DrySnap recommends storing the panels in a warm place prior to installation.

If a beadboard look is what you're after, DrySnap's vinyl panel system may be the solution.

Air flow is good and wood stays dry with the DrySnap system, according to the company. Nothing actually touches the joists, so no spots are created where water can accumulate.

The company offers regional classes and installation certifications. The product doesn't look hard to install, but if you plan to install a lot of it, a couple of hours in a class tweaking the process might turbocharge your production engine.

American Dry Deck

800/272-8086

americandrydeck.com

The manufacturer describes American Dry Deck as a "watertight drop ceiling." Made of vinyl, this snap-lock system is installed level below the joists on 2-by sleepers. It can be installed running in any direction, a trait unique to American Dry Deck. Unlike a typical drop ceiling, however, the panels run the length of the joists and are arched to direct water down into channels that in turn feed into a gutter and downspout.

The only drainage system to be installed level, American Dry Deck panels can be oriented in any direction.

Two gutters, one at the house and one at the front of the deck, collect water. Because the system is level, water moves by piling up in the channels until it reaches the ends where it drains into the gutters. Having two gutters provides good air flow, and since there's no water actually in contact with the deck, the framing dries, according to the company.

American Dry Deck is installed by attaching 2-by sleepers to the bottoms of the joists and then attaching stringers perpendicular to the sleepers. The arched ceiling panels are flexed and fitted into the sleepers; to finish up, the bottom locking cap is tapped into place with a dead-blow hammer.

Zip-Up UnderDeck

888/449-4787

zipupdeck.com

The Zip-Up system is a pitched, paintable PVC product that creates a flat, water-diverting surface under the joists. The ceiling hangs on furring-strip spacers installed under the joists at a 1/8-inch-per-foot slope. Zip-Up rails are screwed in place perpendicular to the sleepers.

The main structural element of the system is the rails. The only other parts are wall trim, seam trim, and the panels themselves. Simple. The whole thing is held together with screws and washers snugged just so to prevent deforming the PVC rails.

To lay it out, you begin by centering the field such that the left and right end pieces will be ripped to the same width, much like you would with a tile floor or a suspended ceiling. It requires a little line snapping. The company doesn't recommend installing its product in temperatures lower than 50 degrees, though you can be sure builders will store it inside to get it nice and warm before bringing it outside and installing it in the cold anyway. The panels are available in 8-, 12-, and 16-foot lengths and in white and black (with beige coming soon). The system looks like it goes in fairly quickly, using minimal parts.

Zip-Up UnderDeck uses paintable vinyl panels for the drainage plane and the finished ceiling.

Zip-Up is distributed only in certain regions at the time of this writing, though the company plans to go national. The product can also be ordered directly from the manufacturer.

BETWEEN-JOIST SYSTEMS

Between-joist systems use the edges of the deck's joists themselves as a fastening point for the system's hardware. The hardware then guides the water into a V-panel (DrySpace) or into a below-joist gutter (UnderDeck).

As with ceiling systems, the spaces between the joists are exposed to the elements, which your electrician needs to keep in mind.

TimberTech DrySpace

800/307-7780

timbertech.com

The anchor point to the deck frame for DrySpace's extruded vinyl under-deck system is a series of brackets. Ledger Brackets fasten to the ledger, and U-shaped Combo Brackets wrap the bottom of the joists. Both of these brackets are fastened like vinyl siding, with nails

DrySpace's V-shaped vinyl panels hang from ledgers that are fastened and taped to the sides of the joists.

or screws driven loosely through slots in a nailing flange to allow the vinyl to expand and contract during temperature changes. The tops of the brackets are sealed to the framing with a butyl peel-and-stick tape. A V-shaped channel hangs from the brackets to collect and drain the water into a gutter.

For oddball joist spacing, you can combine the 12-inch and 14-inch DrySpace panels with 2-by filler strips to make the system work. TimberTech notes that this variation may leak a little.

The end joists have an odd trim detail. The company doesn't have a purpose-made piece; instead, TimberTech says to cut the outside flange from a Combo Bracket with a utility knife. I can imagine wanting to add a trim board above that piece for high-end decks.

UnderDeck

877/805-7156

underdeck.com

Like DrySpace, UnderDeck uses the sides of the joists as the anchor point for brackets, which are called joist rails. But rather than draining to a trough in the joist bays, water drains into sub-joist troughs from vinyl panels arched into place between the joists. These troughs clip to the joist rails, capping the bottoms of the joists and draining into a gutter at the front of the deck.

A water diverter, essentially a piece of vinyl flashing, is installed at the ledger in each joist bay prior to closing the system in with the arched panels. You can tuck the diverters (they look like little diving boards) up under the existing flashing, fastening and caulking them in place. The diverters drain into the troughs.

UnderDeck provides some helpful installation details. For oddball joist spacing, the company advises you to rip a panel to fit such that you can maintain a consistent arch on all the panels. And if the pieces oil-can or ripple due to joists running off layout, the company suggests running a pair of snips down the edge to trim the piece, like scribing a cabinet filler but significantly less exacting. I appreciate not having to figure that out on site.

UnderDeck's vinyl panels arch between the joists and drain to troughs that run the length of the joists into a gutter.

A sheet-metal brake would be a handy tool to have when installing this system, for two reasons. UnderDeck describes bending one of its diverter pieces to create an end cap, a nice detail that can easily be made with a brake. And while you can cut pieces to length and width with a utility knife, who has that kind of time or forearm strength? Snapping the vinyl panels into the jaws of a brake would speed things up. ❖

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