



Installing a Deck Ledger

Part 2. Use a belt-and-suspenders flashing approach to prevent water damage to the house framing

by Mike Guertin

[Editor's note: This is the second of a three-part series on installing deck ledgers. Part one took a close look at attachment details, while part two explains how to install leakproof flashing.]

The walls behind the ledgers on nearly every old deck I've repaired or replaced in the past 15 years have had some level of water damage due to the ledger cap flashing leaking or poor installation of the flashing. Often, sections of wall sheathing were rotted, and sometimes, the house rim joist was severely decayed. Luckily, in the latter cases, the owners had noticed that something was wrong and had us inspect the decks before they collapsed.

There's no one "right" way to flash a deck ledger. While the International Residential Code addresses ledger flashing, it does so with a performance standard. Rather than providing prescriptive details,

the IRC describes the required outcome.

The ledger-flashing requirement is found in footnote "a" under Table R507.9.1.3(1) in the 2018 IRC: "Ledgers shall be flashed in accordance with Section R703.4 to prevent water from contacting the house band joist." The code doesn't provide an illustration for how to detail the flashing. The only other information in Section R703.4 is that a "... corrosion-resistant flashing shall be applied shingle-fashion in a manner to prevent entry of water into the wall cavity or penetration of water to the building structural framing components." The code also notes that self-adhered and fluid-applied membranes shall comply with certain standards, but leaves it to you and your code official to decide how to design and install a ledger-flashing system suitable for your climate.

In dry climates, a simple metal or plastic cap flashing may be adequate to pre-

vent water from contacting the band joist. But in wet climates, and especially where wind-driven rain is common, a more complex flashing system may be needed. I take a belt-and-suspenders approach and add an extra insurance layer. The material cost is negligible in the overall cost of a new deck, and on an average-sized deck, it takes only about an hour to assemble.

I use a three-layer system (see photos on following pages). First, I apply a sheet of self-adhering, self-sealing membrane to the wall before installing the ledger over the membrane. Then I apply "pre-flashing"—a strip of self-adhering membrane that laps over the top of the ledger and extends up the wall. I finish up the flashing installation with L-shaped metal or plastic cap flashing. ♦

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First Flashing Layer. Start by cutting the housewrap away from the ledger area and creating a head flap (1). Next, cut strips of self-adhering membrane to apply to the wall sheathing from a roll of ice-barrier waterproof roof underlayment or wide flashing tape membrane. Strips should be at least 3 inches wider than the ledger; lengths about 5 to 6 feet long are easier to handle than longer ones when you're working solo. Score through the release liner using very light pressure to leave a 2-inch-wide strip of the release liner along the bottom edge of the membrane so that later—when the cladding is installed—the membrane can overlap it (2, 3). After removing the wider pieces of release liner, install the strips to cover the wall sheathing at least an inch above the top of the ledger position, 2 inches below the ledger, and 3 to 4 inches past the ends of the ledger, overlapping the pieces by 4 inches or so at joints (4, 5). Use a “J” roller for additional pressure to aid in bonding in cool weather; in cold temperatures, the wall sheathing may require a special primer. Finally, fasten the ledger to the wall framing using the connection details described in Part 1 of this series (6).

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Second Flashing Layer. Before installing the cap flashing, the author pre-flashes the ledger with another strip of membrane or tape to separate the metal cap flashing from the pressure-treated lumber, which reduces the chance of corrosion and backs up the cap flashing in the event it is ever damaged. Cut in 3- to 4-foot lengths (so they're easier to control when being applied), the pre-flashing membrane is sized to extend over the top of the ledger and about $\frac{1}{2}$ inch down its face, and up the wall about 7 to 9 inches. First, score the release sheet 2 inches from one edge, along the ledger-to-wall corner, then fold the ledger leg of the strip up so the release liner is facing outward as the membrane is positioned above the ledger and against the wall (7). With the first strip oriented so it extends about 1 inch past the first flashing layer, remove the release sheet on the ledger leg (8), making sure the strip is snug to the corner where the ledger meets the wall. Then fold the ledger leg down and over the face of the ledger (9). Next, lower the wall leg of the strip, remove the release liner (10), and lift the leg to the wall carefully, starting in the middle of the strip and making sure the membrane is tight to the corner where the ledger meets the wall (11). Don't bridge the corner with the membrane, or it may rupture when the cap flashing and decking are installed. Detail the end of the first strip by making a diagonal relief cut in the membrane at the corner where the top of the ledger meets the wall (12), then install additional strips of membrane along the top of the ledger, each overlapping the previous one by about 4 inches (13, 14).

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Cap Flashing. The IRC requires metal flashing be at least 26 gauge, or 0.019 inch thick (some stock sold at box stores and lumberyards isn't thick enough to meet code). Because the author hasn't found preformed metal or plastic cap flashing with a back leg that's tall enough, he typically bends his own from standard 0.019-inch-thick colored aluminum coil stock. He sizes his cap flashing to cover the top of the ledger with a drop leg of $\frac{1}{2}$ inch or more on the face of the ledger and with a 6-inch or taller wall leg. While a simple "L"-flashing with a wider ledger leg that extends straight out over the top of the deck joists (instead of being turned down over the face of the ledger) is OK, try to limit the ledger-joint leg so that it is $\frac{1}{2}$ inch shorter than the first joint in the decking that covers it. Otherwise, leaves and other debris that fall in the gap between deck boards will be trapped and accumulate, and be difficult to clean out. Prepare the end of the flashing by making a cut at the wall-to-ledger bend and turning down the ledger portion to cap over the end of the ledger (15). Nail the flashing along the top edge with roofing nails made from the same metal as the flashing (16). After folding the housewrap head flap down over the flashing (17), seal the end of the cuts in the housewrap where the pre-flashing membrane laps onto it, using a piece of acrylic adhesive construction tape (18).

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Integrating With Siding Below. When the deck is above grade level, and siding will be covering the wall beneath the ledger, the loose portion of membrane with the strip of release sheet left on (see photos 5 and 6, page 22) can be lapped over the siding to kick out water to the surface. Install the siding (fiber cement, lap siding, shingles, vinyl) up to the ledger except for the last row (19), then fold the membrane strip over the top of the siding and trim off any excess that will show beneath the overlying cover piece (20). After removing the release sheet, bond the membrane down to the top of the siding and install the last row of siding or trim beneath the ledger (21). If you are concerned about trapping water between the membrane and the overlying piece of trim or siding, slip plastic toothpicks between the last piece and the membrane to provide a weep space. At the ends of the ledger, note how the extended end of the first membrane strip applied to the wall laps over the top of the siding. Any water that gets in at the butt joint between the siding and the end of the ledger will drain out on top of the siding where it won't do any harm (22). If the deck is at grade level and there are only a couple of inches of wall sheathing below the bottom of the ledger, the bottom of the first flashing layer can be bonded down and a piece of trim installed to cover it.