

BY MIKE GUERTIN

Roofs generally don't leak in the field of shingles unless there is some kind of damage. Other than ice dams, leaks usually occur at flashings around chimneys, roof-to-wall connections, and penetrations like exhaust vents. Of all the calls to investigate roof leaks I've received in the last few years, there's been one main culprit: plumbing vent flashing boots. Often I find the rubber collar on the boot has split or been damaged by a falling branch or a critter chewing at the rubber. In some cases, the collar is fine, but the leak is due to how the shingles were detailed around the flashing pan.

Whatever the cause, the leak can lead to damage. When the roof has a vented attic below, the leak usually evidences itself as a stain in the ceiling beneath the attic, with little damage other than to the drywall and paint. Where the leak can be more devastating is on roofs where the rafters or trusses have been insulated with spray foam applied directly to the roof sheathing. There, the leak can persist for years before it's noticed, all the while rotting the surrounding sheathing and framing. □

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PLUMBING

Vent Flashing Done Right

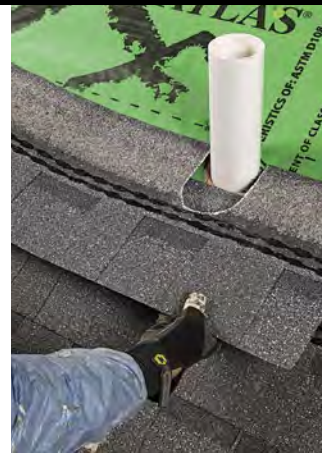
Back up roof vent boots with flashing, counterflashing, and proper shingling to prevent leaks



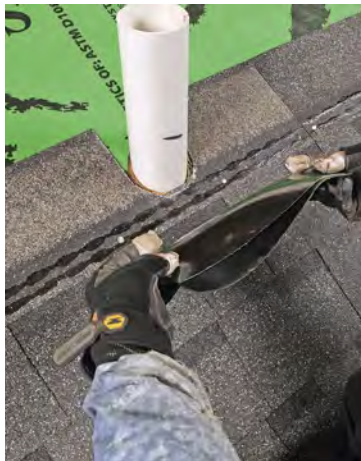
RUBBER COLLAR: THE WEAK LINK

Today's roof shingles are much longer lasting than earlier generations. Many vent flashing boots, on the other hand, haven't improved to match. Most boots have a thin rubber collar that seals to the vent pipe. There's often no additional seal beneath the collar, so if—or when—the collar is damaged or splits, water can find a path into the house. Whether using a standard vent flashing boot, as I did here, or one of the premium products, back it up by sealing the vent pipe to the roofing with flashing tape. I do this with 6-in.-wide strips of uncured EPDM flashing tape with a butyl adhesive backing. My preferred tape for this is Protecto Wrap's Form Flash 2 EPDM. It's durable, rated for UV exposure, and very flexible; it adheres and seals aggressively; and it works at low and high temperatures. You'll need two strips of tape to flash the pipe to the roof, each at least 6 in. longer than the pipe opening so that they're long enough to get a good overlap.

FLASH THE PIPE



Shingle up to and around the pipe. The top edge of the last course of shingles to go on before the flashing tape should extend at least to the middle of the pipe, but no further up than the self-seal strip on the shingle. Hold the shingle in place below the pipe and mark the cutout with chalk.



Tape the downslope. First, mark a line on the pipe representing the top of the vent boot's collar. Fold the tape in half lengthwise, with the adhesive side out, and, starting from the middle and $\frac{1}{2}$ in. below the mark, wrap the tape around the pipe, working one side at a time.



Tape the upslope. Using the same method as the downslope side, apply the second piece of tape so it overlaps the first around the pipe, again staying $\frac{1}{2}$ in. below the collar mark.

FLASH THE PAN LIKE A WINDOW

Pans for flashing boots don't have a wide flange to overlap with the surrounding shingles. Most installers seal the shingles to the pan with roof cement, which may dry and crack (and leak) before it's time to reshingle the roof. Instead of cement, I use flashing tape to extend the pan's perimeter and seal it to the shingles and underlayment to make it more storm-resistant. I also add a rain dam strip along the underside of the bottom of the pan to bond the bottom edge to the shingle and resist wind-driven rain. After flashing the boot, I tuck an extra piece of underlayment beneath the next underlayment joint above, and lap it over the top of the boot's metal flashing to serve as counterflashing, so the system doesn't just rely on adhesive bonds to keep water out.

FLASH UNDER THE PAN



Score the backing. Cut a piece of asphalt flashing tape about 1 in. narrower than the width of the flashing pan, and use a utility knife to score the release sheet down the middle so it can be removed in two steps.

Dam the rain. Remove the backing on one half of the tape, then center and bond it to the underside of the bottom portion of the flashing pan. Then fold the flashing tape back on itself and remove the second strip of release sheet.



Boot it. With one hand under the pan holding the tape flap so the sticky side stays down, slide the flashing boot over the pipe, align the flashing pan square with the roof shingles, and press the bottom edge down to seal the tape.

FLASH OVER THE PAN



Tape the sides. Cut two strips of 4-in.- to 6-in.-wide asphalt flashing tape and apply it over the sides of the flashing pan and onto the shingle and underlayment. Keep the tape above the shingle's self-seal strip, and let it extend 1 in. to 2 in. above the pan. Keep the edge of the tape about 1/2 in. away from the pan's bell.



Tape the head. Cut a strip of 4-in. to 6-in. flashing tape long enough to cover across the tops of the side strips of flashing tape. Overlap the top of the pan flashing, keeping the bottom edge of the tape about 1/2 in. to 1 in. above the bell of the flashing pan.



Extra protection. Cut and install a piece of underlayment that laps 6 in. beneath the next underlayment joint above, and down onto the top of the flashing boot's pan.

SHAPE THE SHINGLES



Trim shingles to fit. Continue shingling. When you get to the vent pipe, mark the cutout for the vent pipe on the shingle, using another shingle as a straightedge. I eyeball the curve around the flashing boot's bell.



Shingle on. With the cutout made, put the shingle in place.



Nail it. Depending on your shingle's exposure, you'll have to mark a cutout on the next course as well.