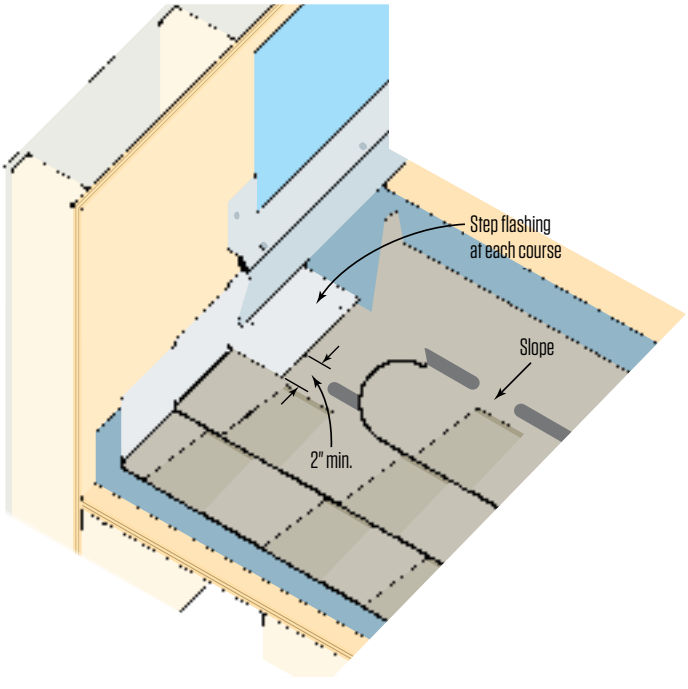
BY GLENN MATHEWSON

Step Flashing vs. Continuous Flashing

Tried-and-True Step Flashing



While the building code now allows you to install continuous flashing along a sloped roof-to-wall intersection, the author cautions against it and instead advises sticking with the long-accepted practice of installing step flashing, as shown in the illustration above. This detail is taken from detail ASPH-12A of the NRCA Roofing Manual: Steep-Slope Roof Systems—2013.

The development of the International Codes is a continuous process, with each code volume being revised on a three-year cycle. Changes are submitted and approved and can then be reviewed in subsequent cycles. Controversial changes get people and the building industry thinking, which is what happened recently with the way code looks at sidewall flashing in asphalt-shingle installations.

STEP FLASHING THROUGH HISTORY

Step flashing has been required for asphalt shingles at roof-to-wall intersections as far back as the 1986 CABO. With this method, L-shaped pieces of metal that are a couple of inches longer than the shingle overlap are installed on top of each shingle adjacent to the sidewall, and the flashing is then laced into each course. Step flashing ensures that any water that migrates underneath a shingle will still end up on top of the flashing that is covering the shingle below. The water can then drain away safely.

In addition to the CABO reference, the requirement for step flashing at sidewalls appeared in the first edition of the International Residential Code (2000 IRC) and remained unchanged through the 2009 edition.

Every asphalt-roofing manufacturer's installation instructions that I have ever seen specify step flashing as the preferred way to flash the roof-to-wall juncture. And in section 905—which covers the installation of all roof coverings—of the 2015 IRC, the first sentence requires compliance with the code and the manufacturer's installation instructions. But things changed in 2012.

ENTER CONTINUOUS FLASHING

In the 2012 IRC, the section that covered sidewall flashing was much expanded, and for the first time, it included continuous flashing as an approved method for roof-to-sidewall flashing with asphalt shingles. Continuous flashing has always been used at a

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headwall (an intersecting wall at the top of a roof plane and perpendicular to the slope). In this case, continuous flashing is simply a single piece of flashing placed behind the exterior cladding and weather-resistive barrier on the wall and then extended out over the shingles. The flashing can be left exposed, or installers can adhere a "beauty strip" of asphalt-shingle material to the flashing to make it less visible from the ground.

NO CLEAR DIRECTIONS

To complicate matters, the new provision allowing the use of continuous flashing at sidewalls is rather vague and provides few installation details beyond the need for the vertical leg of the flashing to be at least 4 inches tall and for the flashing to divert water away from the side wall using some sort of kick-out flashing.

Installation details for continuous flashing are also missing from the asphalt-shingle manufacturers' installation instructions. After decades of sidewall step flashing being installed beneath the shingles, continuous flashing is most likely to be installed below the shingles as well. But some installers may assume that continuous flashing should be installed above the shingles, as is done for headwall flashing. The IRC offers nothing to clarify this issue.

Continuous flashing at sidewalls is standard practice for clay tile and slate shingles (see "Roofing With Tile," 06/15). In those applications, the continuous flashing installs under the roofing. Those roof coverings are meant to provide protection from bulk water movement only, with the expectation that moisture will find its way beneath the roofing and that the underlayment will provide the final protection.

Industry standards and manufacturer installation instructions for clay and slate also specify that the continuous sidewall flashing have a J-roll along the edge under the shingles and over the roof deck. The small roll along the long edge of the continuous flashing helps to ensure that water will flow down to the bot-

tom of the flashing and not migrate sideways and off the flashing.

This roll is effective for clay and slate roofing because those products are usually elevated on horizontal battens. Asphalt shingles, however, are not rigid like clay or slate, and a J-roll would likely telegraph a hump to the finished surface. Additionally, asphalt shingles would not protect the J-roll from getting flattened by someone walking on the roof. But the IRC does not mention a J-roll along the edge of continuous flashing in an asphalt-shingle application.

REGIONAL APPLICATIONS

Based on anecdotal evidence I've gathered, continuous flashing is used regularly only in drier regions of the country, such as the desert Southwest. Mike Guertin touches on continuous flashing in his roofing demos for JLC Live, and his insights for installing continuous flashing are provided in "Installing Continuous Flashing," on page 26.

After all this information was discussed (with plenty of opposition) in the 2012 hearings and again in 2015, the measure was still approved. But because this new subject is not clearly spelled out in the code, I would encourage you to do a little homework before trying to change the decades-long practice of using step flashing with asphalt shingles. Review the installation instructions of the product you are installing and perhaps contact a technical representative at the manufacturer for guidance for an alternative installation method that uses continuous flashing. Then follow whatever details the manufacturer provides.

Also I'd review the adopted code, as well as any amendments, to see if your local jurisdiction has accepted this practice. But perhaps the easiest solution is to leave well enough alone and continue using the tried-and-true step-flashing method.

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INSTALLING CONTINUOUS FLASHING

In the roofing demonstrations I do at JLC Live, I've included continuous flashing for sidewall-to-roof intersections since 2002. But if you decide to go that route, you need to understand that water may move laterally and reach the underlayment. With that risk in mind, I recommend continuous flashing installation details designed to direct the water down slope and to resist lateral movement of water.

I start by applying a 12-inch-wide strip of self-adhering flashing tape to the roof and wall sheathing to back up the continuous flashing. If water gets under the continuous flashing, the flashing tape helps channel the water down the roof and out at the eaves. I bond 6 inches of the flashing tape to the wall and 4 inches on the roof sheathing. The remaining 2-inch portion of the roof leg doubles over and bonds to the underside of the roof underlayment. After sticking the underlayment to the tape, I tack both down with staples.

The code minimum for continuous flashing is 4 inches for both the wall and the roof legs, but I go with at least 5 inches for both to accommodate minimum off-the-roof spacing requirements for some siding. This still leaves me with more than 2 inches of flashing under the siding.

The least visible continuous flashing is installed under the shingles. While the code doesn't require a J-roll at the edge of the roof leg, as Glenn mentioned, I recommend including this easy-to-make detail when fabricating the flashing **(A)**. With the J-roll, the outer edge of the roof leg is doubled over twice to eliminate sharp edges that might cut the shingles. The J-roll helps block lateral water movement and redirects it down the slope on top of the flashing. The shingles then install on top of the flashing **(B)**. You can bed the shingles in a bead of roof cement for additional water resistance; however, doing so will make it harder to reuse the flashing with future reroofs.

Back flashing the roof leg makes continuous flashing under the shingles even more water-resistant. I use two 4-inch strips of flashing tape. Two inches of the first strip bonds to the underside of the roof leg **(C)**. The other half of that strip bonds to the second strip **(D)**, which then folds over and bonds to the underside of the shingles to help prevent water from reaching the underlayment **(E)**.

Applying continuous flashing on top of the roof shingles is another option. I recommend hemming the roof-leg edge and making a slight bend to stiffen and reinforce the edge **(F)**. The hem and the bend help the flashing resist oil-canning and lay flat on top of the shingles. Use clips to avoid fastening through the roof leg. I make the clips from scraps of flashing metal and fasten them through the shingles, spaced about 16 inches apart **(G)**. The continuous flashing sits on top of the shingles, and after fastening the vertical leg to the wall, the clips bend up and over to hold the roof leg in place **(H)**.

—Mike Guertin is a remodeler and custom home builder in East Greenwich, R.I., and he leads the roofing demonstrations at the JLC Live and Remodeling shows.