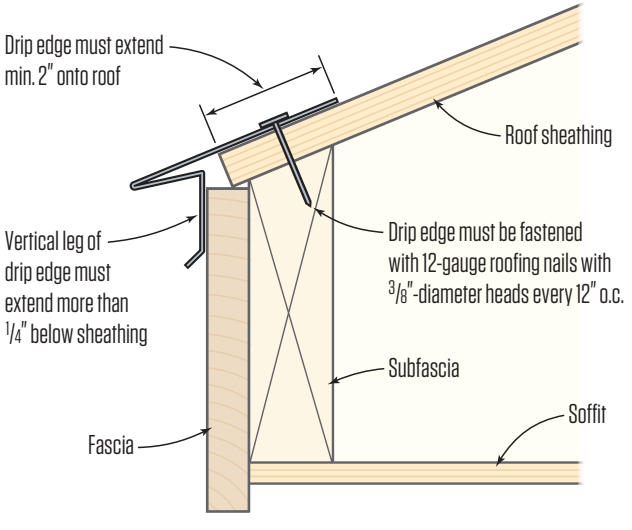
BY MIKE GUERTIN

Drip Edge and the IRC

Roof drip edge is one of those products that just doesn't get the attention it deserves from contractors or roofers. From product selection to installation details, drip edge often takes a back seat to the shingles or to eaves flashing (see "Drip Edge and Ice-Barrier Membrane," Mar/18). And that's too bad, because drip edge has a large impact on how water-resistant the eaves and rake edges are and how well the water drains over the fascia. It can also be a critical element for how well a roof performs and stays intact during a hurricane or other high-wind event.

Photo this page by Mike Guertin; illustration by Tim Healey

Code Requirements for Drip Edge



DRIP EDGE AND CODE SPECIFICS

When I started working on homes in the 1970s, installing metal drip edge was entirely the installer's choice. The International Residential Code (IRC) did not require metal drip edges along eaves and rake edges until the 2012 edition (See Code Requirements for Drip Edge, below left). So depending on where you work and what code prevails in that area of the country, metal drip edges still may not be required by code.

Section R905.2.8.5, Drip Edge, in the IRC spells out what the IRC requires: "A drip edge shall be provided at eaves and rake edges of shingle roofs. Adjacent segments of drip edge shall be overlapped not less than 2 inches. Drip edges shall extend not less than 1/4 inch below the roof sheathing and extend up back onto the roof deck not less than 2 inches. Drip edges shall be mechanically fastened to the roof deck at not more than 12 inches on center with fasteners **(1, 2)** as specified in Section R905.2.5 [roofing nails with minimum 12-gauge shank and 3/8-inch-diameter head]. Underlayment shall be installed over the drip edge along the eaves and under the drip edge along the rakes."

LOOKING DEEPER IN THE CODE

When contractors check code provisions, they often check only the specific section addressing the building element they are tasked with and may overlook other code sections that relate to that building element. In the case of drip edge, another relevant section is Section R903, Weather Protection, and the subsection R903.1, General, which states: "Roof assemblies shall be designed and installed in accordance with this code and the approved manufacturer's instructions such that the roof assembly shall serve to protect the building or structure."

By and large, the wording of this section means that when the manufacturer's instructions have a higher or stricter standard for construction than the code itself, a local code official can require that the manufacturer's higher standard be followed. The IRC reiterates the point in Section 905.2.8, Flashing: "Flashing for asphalt shingles shall comply with this section and the asphalt shingle manufacturer's approved installation instructions."

Section R903.2, Flashing, starts out with a general statement of how flashing—including drip edge—must

Code requirements for nailing drip edge. Code requires that the drip edge extend at least 2 inches onto the roof from the fascia board **(1)**. This drip edge extends much farther. Nailing along the eaves should be spaced at no more than 12 inches on-center. Nailing should also be 12 inches on-center for rake drip edge **(2)**. In both of these examples, the installer arranges the fasteners in a W pattern to put the drip-edge attachment closer to the edge of the roof.

be installed: "Flashings shall be installed in a manner that prevents moisture from entering the wall and roof through joints in copings, through moisture permeable materials and at intersections with parapet walls and other penetrations through the roof plane." It's not until you read further in that section that you find a sentence that describes the minimum standards for metal flashing material: "Where flashing is of metal, the metal shall be corrosion resistant with a thickness of not less than 0.019 inch (0.05mm or No. 26 galvanized sheet)." This is an important point to note. Even though the drip-edge corrosion resistance and minimum thickness are not called out specifically in the drip-edge subsection, the code does address them.

The problem is that many drip edges sold at building supply houses are only 0.011 inch thick and are often even thinner. The difference between 0.019 inch and 0.011 may not seem like a lot, but 0.011-inch metal is 42% thinner than 0.019-inch metal, and you can certainly feel the difference—especially when the two are side-by-side. And corrosion resistance can have a much different significance depending on whether you're building inland or building near the ocean. Aluminum and galvanized steel may hold up for the lifetime of a roof in most areas, but they will corrode rapidly in coastal conditions.

BEYOND THE CODE

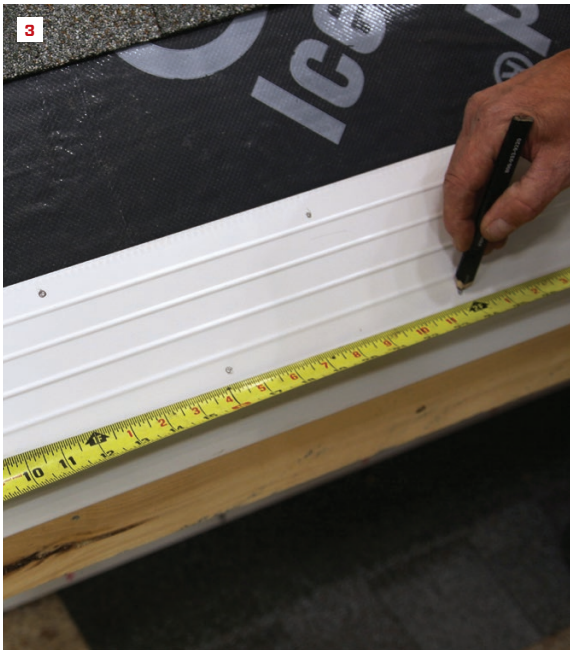
While the code recognizes the duties of drip edge in keeping moisture from getting into a house, it is an unsung hero when it comes to the wind resistance of an asphalt shingle roof—especially along the perimeter of the roof, where the effect of high wind can be most pronounced and is most likely to cause damage. The Institute for Business and Home Safety (IBHS) developed the Fortified Home program along with a series of guides for building in hurricane and high-wind zones. These guides include sections on roofing best practices based on research and field examinations of roof performance in areas prone to high winds or hurricanes.

One take-away that I gleaned from the Fortified Home guides is that measures to help keep the perimeter shingles—along the eaves and rakes—in place are critical to maintaining roof integrity in severe wind. And the guides recognize that metal drip edge is an important element for keeping those perimeter shingles intact and in place during a wind event.

The Fortified Home guides go beyond the basic code requirements by recommending that drip-edge sections overlap at least 3 inches, and that the drip edges be fastened with roofing nails at 4 inches on-center in a two-row W pattern **(3, 4)**. Ideally, there should be a 2-by subfascia or solid blocking between rafter or truss tails for sheathing attachment; the bottom row of drip-edge nails can be driven into that blocking.

The guides also address installing the starter courses of shingles along the eaves edge and the rake edge. They recommend installing the starter courses flush with the eaves and rake drip edges, or overhanging the drip edge by a maximum of ¼ inch. Limiting

Photos by Roe Osborn



Drip-edge nailing taken to the next level. For regions prone to high winds, the Fortified Home program recommends that the nails for the eaves drip edge be no more than 4 inches apart **(3)**, instead of the code-required 12-inch spacing for drip-edge nails. The recommendation for rake drip edge is the same **(4)**. Nails should be driven in a two-row W pattern. The Fortified Home guidelines also call for the shingles along the eaves and rakes to be bedded in an 8-inch band of roofing cement.

how far the shingles overhang the drip edge reduces the chance that wind will be able to get under the shingles and lift them. I checked with the installation instructions of seven major roof-shingle manufacturers to see how they address the amount that shingles should overhang the drip edge. Almost all of them listed acceptable overhang distances from flush up to ¼ inch.

The Fortified Home guides also call for bedding the eaves starter shingle and the rake-edge shingles in an 8-inch-wide band of asphalt roof cement, which cements the shingle to the drip edge, further strengthening the outermost edge of the roof in a high-wind event. In the field of the roof plane, self-sealing strips on the shingles should be adequate to bond the leading edge of shingles to the shingle underneath, keeping them in place.

SHOPPING FOR DRIP EDGE

Drip-edge profiles are available in a variety of designs and sizes. You'll often see them designated as a "Type" or "Style" followed by a letter: A, C, D, F, L, T. These designations can get a bit confusing because manufacturers use different designations for similar-looking drip edges. When you boil it down, there are two basic drip-edge profiles suitable for asphalt shingles. One is a simple "L" shape with a 90-degree bend between the roof leg and fascia/rake leg (NRCA calls this Type L, but others refer to it as Type C). The other profile has an extended edge that projects past the fascia or rake boards by about ½ inch before bending into the vertical leg (the NRCA calls this Type T, while others refer to it as Style D or extended drip edge). Either style of drip edge is suitable for eaves or rake use.

I generally choose the extended-style drip edge along eaves edges, so water rolling off the edge of the shingles will tend to drip away from the fascia and into a gutter. And to keep things simple, I use the same drip edge along rake edges. Some roofers prefer to use the extended drip edge along eaves edges and the L-shaped drip edge along the rakes.

It's important to get the proper size roof and fascia/rake legs when selecting the drip edge for your project. Wider roof legs provide more surface area for nailing. I usually select drip edges with at least a 4-inch roof leg along the eaves edge and a 2-inch leg along rakes. The code calls for the fascia/rake leg to extend ¼ inch below the roof sheathing and the Fortified Home guides call for ½ inch. But I like to use drip edge with at least a 1-inch fascia/rake leg.

Neither the code nor the Fortified Home guides differentiate between the drip edge needed on a low-slope asphalt roof (2-in-12 to 4-in-12) and that needed for high-slope roofs (greater than 4-in-12). The extended-style drip edge would probably be a better choice along the eaves edge of a low-slope roof so the water drips off the edge away from the fascia.

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