

Applying the Shingles

The first course starts with a full shingle, while succeeding courses start with progressively shorter pieces having portions removed according to the style of shingle being applied, until the application pattern repeats. By removing different amounts from the first shingle in each course, tabs in one course will not line up with those in the course below, creating the desired water resistant arrangement and attractive visual pattern.

For ease of illustration, a method using a non-specific offset dimension is shown in Fig. 9. For directions and illustration on appropriate methods, it is important to consult the manufacturer's application instructions.

With the 6" method, the first course begins with a full-length shingle. The second course begins with a shingle that is 6" shorter, and the third course starts with a shingle having 12" removed. The pattern repeats itself beginning with the fourth course, when a full-length shingle is used.

Applying Shingles at Valleys

Laminated shingles can be installed at valleys using the woven, open, or closed-cut method. Consult the *ARMA Residential Asphalt Roofing Manual* for detailed descriptions of these and other methods. The following is an overview of the closed-cut method.

Make sure the valley preparation is complete (see Figs. 4a and 5). Beginning with the lower-sloped roof plane, apply *only the*

first course of shingles along the eaves, into and over the valley, with the last shingle extending at least 12" onto the intersecting roof and secured with two nails. Do not nail within 6" of the valley centerline. Never allow end-joints in the valley; add in a length of shingle so the end of the shingle extends at least 12" past the centerline.

Apply successive courses up the slope in the same manner, but to one roof plane only, starting with the lower-sloped roof. When the first plane is complete, snap a chalk line 2" from the valley centerline on the steeper-sloped side. Apply shingles to the steeper-sloped side, trimming the end shingles to the chalk line. Trim 1" on a 45-degree angle from the upper corner of all valley-abutting end shingles to direct water into the valley. Finally, embed the end of each end shingle in a 3" wide strip of asphalt roofing cement (see Fig.10).

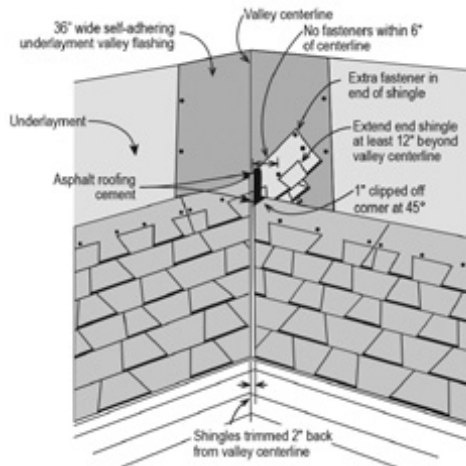


Fig. 10

Flashings

The following discussion is designed only to familiarize the reader with basic flashing concepts. For a more complete and detailed discussion of flashings and flashing application procedures, consult the *ARMA Residential Asphalt Roofing Manual*.

All intersecting roof planes and projections through the roof surface (vent stacks dormers, chimneys, etc.) require flashing to ensure these areas remain watertight. ***Metal flashings should be of at least 26-gauge G-90 galvanized steel, 16 oz. copper or 0.025" aluminum.***

Flashing Against Vertical Sidewalls (Step Flashing)

Step flashing is used when a sloping roof plane meets a vertical surface. Typical step-flashing units are metal rectangles that are a minimum of 2" longer than the shingle exposure by 10" in size and that can be easily bent (shown in Fig. 11a as 7 5/8" for a 5 5/8" exposure shingle).

To install step flashing, place the first flashing unit over the end of the starter strip so that the tab of the end shingle in the first course will cover the flashing rectangle completely. Cement tab to flashing. Position the second step- flashing unit over the end shingle in the first course, above the butt, so the cemented tab of the end shingle in the second course will cover the flashing unit completely. Repeat. (See Fig. 11a and Fig. 11b).

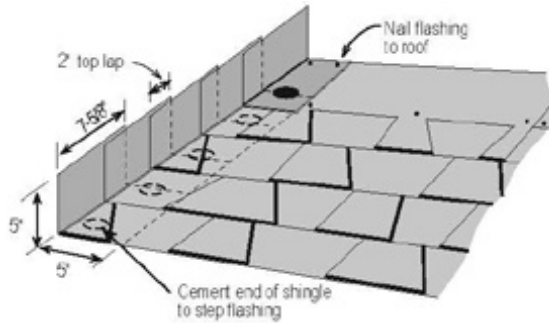


Fig. 11a

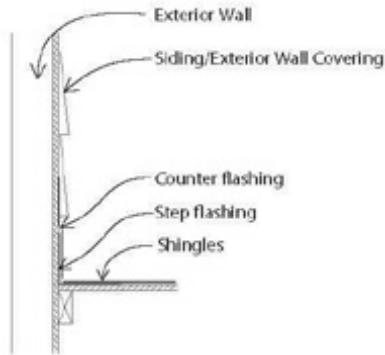


Fig. 11b

Bend each flashing unit to cover the roof deck by at least 5" and to run snugly up the wall surface for 5". Secure the flashing to the roof with one or two nails. Do not nail the flashing to the wall. To prevent leakage, the step flashing must then be counter-flashed.

Flashing around Chimneys

Proper flashing installed around chimneys is a critical and important component in achieving proper water diversion. The components attached to the deck and the masonry must be able to move independently without allowing water leakage. Chimney