

# Flashing a Chimney

by Jonathan Poore



**F**lashing makes watertight joints at junctions between roof and walls, around chimneys, skylights, vent pipes, and in valleys and hips where two planes of a roof meet. Often, the flashing develops leaks before the roofing material does.

This detail shows the most complex flashing problem: making a watertight joint between a chimney and a shingle roof. Chimney flashing is often damaged, badly installed, or missing altogether. Installing proper chimney flashing is within the capability of the competent non-specialist. Although special roofer's tools make the job go faster, the procedures described here can be done with ordinary carpentry tools.

**Layout.** Study this series of drawings to determine what measurements you'll need. If you have an existing chimney flashing that was done correctly, just save the old pieces and use them for patterns. You might also have a cricket, a water-diverting ridge in the roof right behind the chimney. If so, follow the old flashing as a pattern.

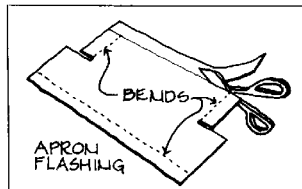
**Copper isn't much more expensive than other metals, and there's no reason not to use the best material. If you're worried about green stains, use lead-coated copper.**

Some over-all layout guidelines: Base flashing must extend under the shingles a minimum of 4 inches, and also up the chimney a minimum of 4 inches. Counter (cap) flashing must overlap the base a minimum of 4 inches. Go around the corners 2 inches for double overlap.

**Materials.** A top quality roofer would usually use cold-rolled copper for this job. He has special bending tools that will handle this stiff material. However, you're not sacrificing much if you use the easier-to-work 16-ounce soft-tempered copper. Copper isn't much more expensive than other metals, and there's no reason not to use the best material. If you're worried about green stains from the copper, use lead-coated copper.

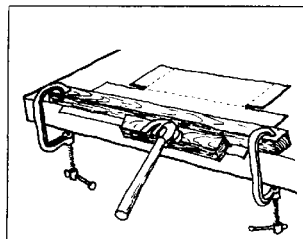
Roofing felt should be laid on the roof decking beneath the base flashing if none exists. Use only copper nails with copper flashing (size nails so that you get at least 1-inch penetration into the roof deck).

**Cutting and Bending.** Mark all bends, cuts, notches. If you have to cut and bend pieces yourself, regular metal-cutting shears can cut 16-ounce copper.

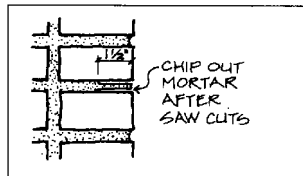


If all measurements are taken beforehand, or if you're using old flashing as a pattern, you may be able to get the shop where you buy the copper to cut and bend it for you.

To form pieces without having to buy bending breaks, tongs, etc.: lamp a 2x4 over the flashing piece, with the bending line at the edge of the work table. Use an additional piece of 2x4 as a block to place against flashing. Bend by striking with hammer. This will give a 90-degree bend. Where necessary to create a hem, unclamp and continue hammering against a 2x4 to bend the metal edge over.



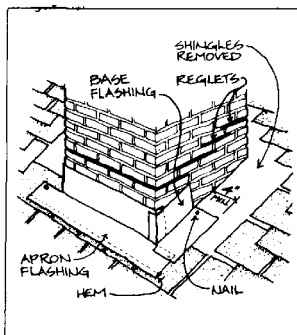
**Reglet.** The reglet is the slot cut in the chimney to hold the cap flashing. The reglet goes straight across the front, is stepped along the two sides, and goes straight across the back assuming there's no cricket). Use a diamond blade with a water spray attachment in a hand-held circular saw; or a portable grinder with a masonry blade. A circular saw with a carbide masonry blade will work, but not as fast as a grinder. In many cases a cold chisel is really all you need.



Make two passes in the mortar joint with the blade set at 1 1/2 inches. Then use a cold chisel to knock out mortar between cuts.

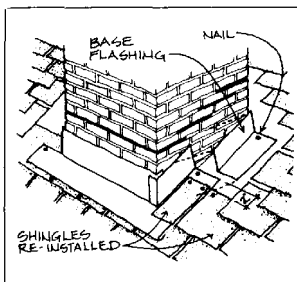
**Base Flashing: Apron.** Remove shingles on three sides of the chimney. Remove to next full shingle beyond the 4-inch minimum. Don't remove any shingles on the down side.

Install apron flashing over the shingles on the lower slope. There should be a hem at the bottom edge. Place one nail at each top corner



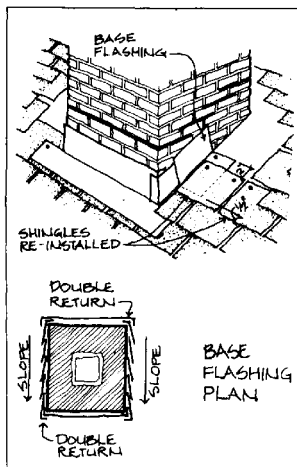
where it will be covered by the first piece of side base flashing.

**Stepped Base Flashing.** Install base flashing on the sloped sides. Note the placement of a single nail in the flashing and two nails in the covering shingle. The first piece of the side base flashing comes around the corner to overlap the apron, so there's double coverage at each corner.



Allow 2 inches of base flashing to extend above top of covering shingle. Flashing should be 1/2 inch above where the butt end (bottom) of covering shingle will be.

Continue to interweave base flashing, then shingle. Be sure that the shingle covers the nail in base flashing, and that the next piece of flashing covers the nails in the previous shingle. Note dimensions of overlap.

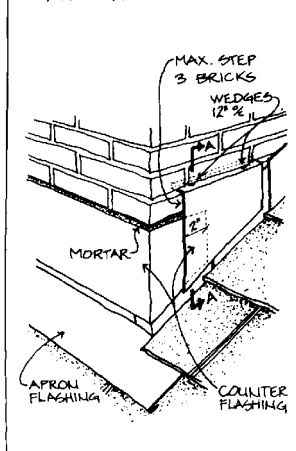
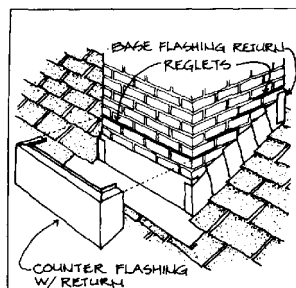


The length of each piece of base flashing is determined by the length and headlap of the shingles. Relay shingles with the same lap that they had. Continue up the slope on each side of chimney.

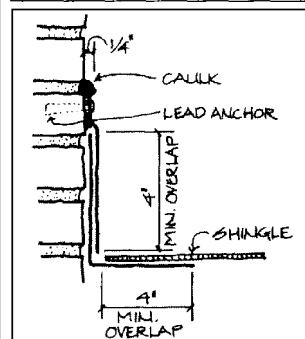
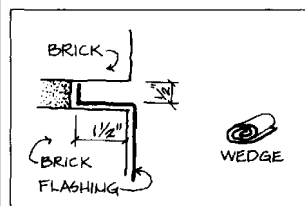
Then install a continuous strip of base flashing on the up-slope side of the chimney, much like the apron flashing at the bottom, except that this piece goes under the shingles that were removed earlier. Create a return at each corner of this flashing to overlap the base flashing. Replace the

shingles on the up-slope side of the chimney.

**Counterflashing Apron.** All base flashing is counterflashed with cap pieces let into the reglet. All cap



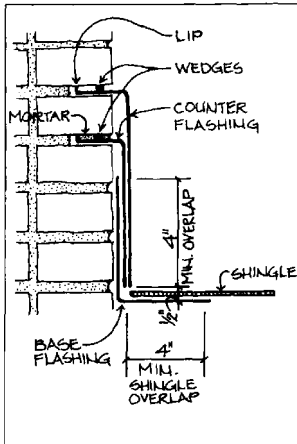
pieces have a 1/2-inch lip on the edge inside the reglet. A hem at the bottom of the cap flashing will stiffen the edge, but if it's too difficult to bend, it's not necessary. Note how the apron counterflashing returns around corners. The apron counter (cap) flashing can extend all the way down the vertical surface.



**Alternate Cap Flashing.** Sometimes it's impossible or undesirable to cut a reglet in a vertical wall. You can make a surface-mounted cap flashing as shown. The flashing is held with brass screws driven into lead anchors in the masonry. The top of the cap flashing is flared 1/4 inch and sealed with caulk. This solution requires annual inspection and maintenance of the caulk seal—obviously less desirable than the more durable cap-in-reglet flashing.

Use rolled metal wedges (either lead or copper) no more than 12 inches apart to hold the cap flashing in the reglet.

**Stepped Counterflashing.** Install each piece of stepped counterflashing according to the drawings. Maximum



step-up between pieces is three bricks. If the slope is very steep, cut more (and narrower) pieces to compensate.

Place metal wedges every 12 inches in the reglet, a minimum of two for each piece of stepped flashing. Cap flashing must overlap base flashing at least 4 inches, but it can come all the way down the vertical wall if desired. Each piece of stepped flashing overlaps the previous one 2 inches on the vertical seam.

**Remortaring.** Repoint the reglet with a mortar that matches the original in composition, color, and shape of joint. Alternately, caulk can be used, but this will require annual inspection and maintenance. ■

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