

HOW TO PROPERLY INSTALL FLASHING AROUND A CHIMNEY:

Chimneys are notorious for leaking, and the culprit is almost always the sheet metal flashings. Just ask any roofer. But it doesn't take an expert to spot problems—simply look for water-stained ceilings or other telltale signs of leaking in the vicinity of your chimney.

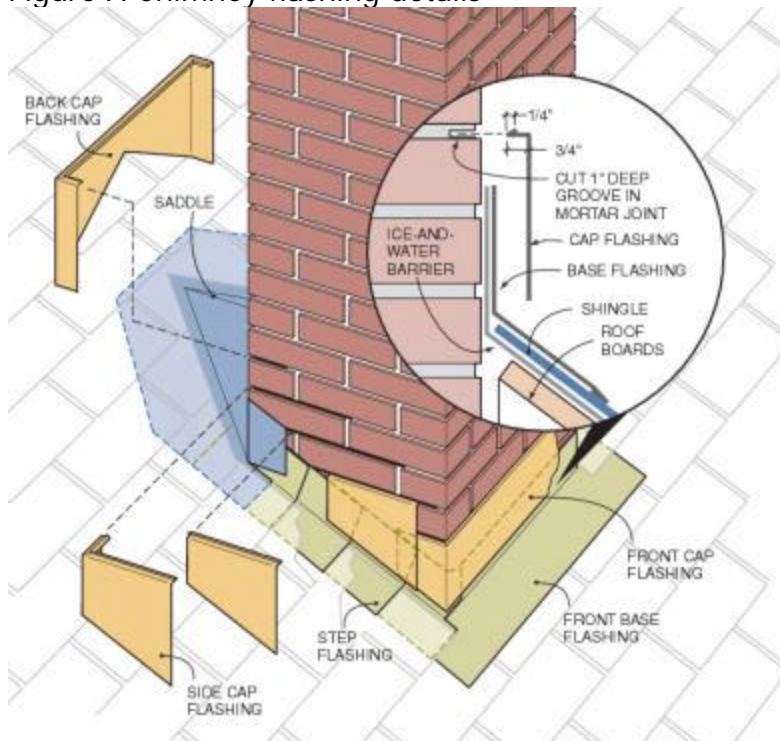
You'll want to install new chimney flashing if it's missing, rusted through, falling out or completely covered with roofing tar (a typical short-term fix that's sure to be hiding bigger problems). It's also a good time to install new flashing when you put on new shingles because you'll want it to last as long as the new roofing (25 to 40 years).



In this how to, we'll tell you how to order new flashing and install it on a brick chimney. Our roof has asphalt shingles, but the procedure is the same for wood shingles. Slate and tile roofs require special flashing techniques that are best left to the pros.

Flashing a chimney is an advanced DIY project. For starters, you have to be comfortable working on a roof. Then you have to measure, cut and bend sheet metal to fit precisely around the chimney and layer all the parts so they shed water. Even so, if you're handy with tools and carefully follow our instructions and diagrams, you'll be able to flash your chimney in a day, and by doing it yourself, save several hundred dollars.

Figure A Chimney flashing details



Click image to enlarge.

Gather All Materials First

Before you do anything, get your ladder, roof brackets and safety harness set up so you can work safely and efficiently on the roof. Then measure the chimney and order the saddle and flashing part.

We ordered all our 26-gauge galvanized metal flashing bent to the correct angles and dimensions from a sheet metal shop specializing in roofing. The shop did a great job. I dropped off the dimensions and three days later the stuff was ready to pick up. Including the custom-made saddle (\$50), the flashing cost \$75. In addition to the flashing and shingles, buy a roll of self-adhering roofing membrane (also called ice-and-water barrier, \$35), two tubes of polyurethane caulk (\$5 each), and a package of 25 drive-in expanding anchors (\$4) from a home center or roofing store.

Besides basic hand tools like a hammer, tape measure, 2-ft. level and square, you'll need a few special tools for working with sheet metal and cutting and drilling masonry. Buy a good pair of straight-cutting tin snips (\$15), a 3/16-in. masonry bit (\$3) and a grinder (a great excuse to buy this useful \$60 tool) or a circular saw fitted with a dry-cut diamond blade (\$25) for grooving the mortar (Photo 7).

Don't forget safety equipment. You'll need a sturdy extension ladder to get on the roof, and roof brackets (\$8 each) and top-quality 2x10 planks to work safely once you get there. For maximum safety, especially if the roof is steep or high, buy a personal fall arrest system (\$300) consisting of a safety harness, lanyard, rope-grab, rope and roof anchor.

Up On The Roof

When the weather report shows clear skies and calm wind, you're set to go. If you don't plan on re-roofing, carefully remove the shingles around the chimney starting above the chimney and working down. You'll have to buy a bundle of new shingles to patch back in. (Don't expect an exact match.) In some cases you may also be able to reuse the old cap flashings and the saddle if they're in good shape. But usually it's best to start from scratch with all new flashings.

Use a pry bar and hammer to remove the old tar and flashing (Photo 1). If the cap flashing won't pull out of the mortar joint, use the pry bar blade as a chisel to cut it off flush with the chimney. You'll be able to cover any remaining sheet metal with the new cap flashing (Photos 8 – 12). Be careful; that old flashing is sharp!

Once you complete the tear out and clean up, shingle up to the bottom of the chimney (Photo 2) and seal around it with 12-in. wide strips of ice-and-water barrier. Lap the strips 4 in. up onto the bricks and overlap adjacent strips to shed water. Run a full 36-in. wide strip across the top of the chimney. Stick this piece to the roof boards and up 8 in. onto the back of the chimney. Later you'll seal the new metal saddle to this piece with additional strips of the membrane and then install roofing paper and shingles over the metal saddle.

Start the flashing job by installing the first piece of base flashing across the bottom of the chimney and over the top of the shingles (Photo 3). Then seal the sides of the chimney with pre-bent pieces of step flashing under each course of shingles (Photos 4 and 5). Slightly flatten the step flashing before you nail it in to ensure a tighter, spring-tensioned fit against the chimney. Pay close attention to overlapping each piece of flashing onto the preceding one in such a way that water is diverted over the top of the shingles. This is the key to a successful flashing job.

Complete the base flashing by nailing the saddle to the roof and sealing it with additional strips of membrane (Photo 6). Shingle over the portion of the saddle that rests on the roof and cut the shingles neatly along the valley, leaving about 2 in. of metal exposed.

How To Buy Chimney Flashing

Making sharp, straight bends in sheet metal is tricky unless you have access to a tool called a sheet metal bending brake. Even then, you need experience to bend complicated shapes. That's why we're recommending that you order your chimney flashing from a sheet metal fabricating shop. Large roofing companies often have their own sheet metal shops and are the best place to buy the chimney saddle and flashing; they'll know exactly what you need. Otherwise, check the Yellow Pages under "Sheet Metal." We used 26-gauge galvanized sheet steel for our flashing and saddle, but pre-finished steel or copper are other possibilities.

Most chimneys have a small roof-like structure behind them, called a saddle (Photo 6), that diverts snow and water to both sides of the chimney. Whether your chimney has a wooden saddle covered with shingles, a sheet metal saddle or no saddle at all (like the chimney in this story), we recommend installing a new custom-made sheet metal saddle (Photo 6).

Custom-made saddles are soldered together at critical spots that are hard to seal on saddles that are built in place. Soldered sheet metal saddles less than 3 ft. wide are self-supporting and easier to install if you just tear out any existing metal or wood saddle. Most old saddles were built right over the top of the roof boards and need no patching. Otherwise, fill in the missing boards before installing the new saddle. Saddles wider than 3 ft. may need additional support. Ask your sheet metal fabricator for advice.

Bending and soldering a saddle is complicated, but sheet metal shops need only two pieces of information from you to bend up a saddle: the width of the chimney and the slope of the roof (see "How to Find Your Roof Slope," below).

In addition to the saddle, you'll need the following sheet metal parts (see Figure A):

- Front base flashing. Order about 12 in. more than the width of the chimney. Some lumberyards stock a "dormer flashing" that will work in this location. A 10-ft. length costs about \$9. You may have to adjust the angle by bending it to match your roof slope.
- Prebent step flashing, 8 x 8 in. Roofers call these "shingle tins". You'll need one for each shingle along the edge of the chimney plus a few extra. Most lumberyards stock these (50¢ each).
- Front cap flashing and side cap flashing. Some sheet metal shops stock a flashing for this purpose, but you'll probably have to have it made. Measure at the front of the chimney from the roof to the third mortar joint and add about an inch to determine the height you'll need. The shape is relatively simple, so you could buy flat sheet metal, called "coil stock," and bend these yourself.
- Back cap flashing. This flashing is identical to the front and side cap flashing.

Have any questions for Jack Dever? Email him at jackdever@sbcglobal.net