



## HOW-TO BOOKLET #3075

# LAYING SHINGLES



### TOOL & MATERIAL CHECKLIST

- Asphalt Roofing Shingles
- Extension Ladder
- Carpenter's Square
- Chalkline & Chalk
- Caulking Gun Shell
- Utility Knife
- Roofing Nails
- Hammer
- Tape Measure
- Asphalt Roofing Cement
- Flashing
- Caulk

*Read This Entire How-To Booklet for Specific Tools and Materials Not Noted in The Basics Above.*

Reroofing is a hot and heavy job. The cost and difficulty of reroofing depends on the type of roof involved. If the roof you will resurface is a simple gable on a one story house, and it is not steep, you probably will be able to reroof it yourself with not much problem. However, if the roof is steep, has multiple planes, needs valley work and complicated flashings, you may want to consider the job carefully before you make a commitment. This How-To Booklet discusses the basics of reroofing a "simple" roof—putting new asphalt shingles over old asphalt roofing.

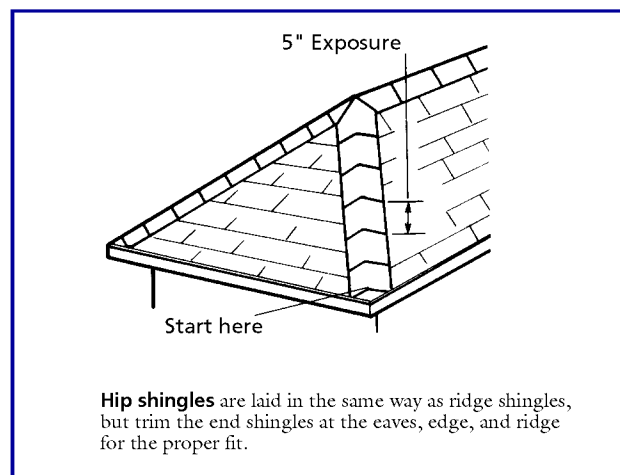
### THE BASICS

There is a work sequence in reroofing. The sequence is for roofs with pitches from 2 to 21 inches.

**Structural deck repair or replacement.** This step is needed when inspection shows rot or damage in the deck or framing. We recommend that you call a professional to handle this work.

**Eave and rake repair.** Either of these, or both, may be necessary when old roofing is removed. Drip edges can be left on eaves if in good repair, but drip edges on rakes should be removed in any case since they must be nailed over the underlayment. If underlayment is not used, rake drip edges can be left as is.

**Metal flashing repair or replacement.** This would not normally be necessary if roofing over an existing roof, but flashing should be checked. On a simple roof, there may be no flashing except around the chimney and vent stack.



**Underlayment.** New underlayment is essential for all jobs except wood shingles or when you are laying new asphalt strip shingles over old asphalt shingles, which this How-to Booklet addresses.

**Valley work.** This will be needed whenever the house is L-shaped, has gable-type dormers, or other areas where roof planes meet at an angle. Simple 2-plane gable roofs have no valleys.

**Laying field shingles.** This is what most of us mean when we say, “putting on a new roof.” If you have a simple 1- or 2-plane gable roof, and you are putting up new asphalt strip shingles over old ones, you can begin at this stage and ignore the earlier steps.

**Ridge and hip shingles.** This is the last stage. Ridge shingling is essential for every reroofing job. Hip shingling is similar, but necessary only on hip roofs.

Note, for your information, that the last two steps are essential in all reroofing projects. Some of the other steps may be needed as well.

## THE STEPS

If the existing roofing is asphalt or fiberglass strip shingles, and the new shingles will be either of these materials, you can start shingling immediately after you prepare the old roof surface.

Installation of this type is lots easier than most because you can use the old shingles to align the new ones. You do not need new underlayment or new flashing, except at valleys or for needed repairs.

Check the deck, rakes, and eaves for possible repairs, and do this work before you shingle. If the roof is L shaped, has gable dormers, or any other type of valley, prepare these areas before you reshingle.

One of the toughest jobs is getting the new shingles onto the roof. If the retailer can't put the roofing on the roof for you, you will have to carefully carry it up a ladder. Transport just a few shingles at a time: the material is extremely heavy.

The basics here are designed to reduce unevenness because of new shingles on top of the butts of old shingles. The new horizontal nailing pattern falls 2 inches below the old roof's nailing pattern. The instructions are for 5-inch exposure for the new and old roofs, which is the most common situation.

## THE 5-INCH EXPOSURE

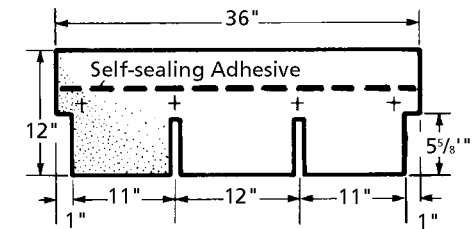
If you have to add new eaves flashing, snap chalklines on the eaves flashing. This will aid alignment of the new shingles until you reach the old courses, where the new shingles will butt against the old.

**Nailing the starter course.** This type of strip should be nailed as for any other single strip, using four roofing nails. However, drive the nails along the center of the strip. End nails should be 1-inch from the edges and both center nails should be 12 inches in from the edges—as for field shingles.

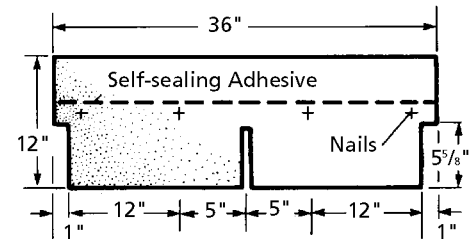
**How to cut shingles.** Cut asphalt and fiberglass shingles from the back. Mark near the top and bottom edges of the shingle, from the front, using a knife. Then turn the shingle over and cut down between the marks. Save the larger cut-off pieces for use on the opposite rake. Keep the knife blade clean.

**Laying the starter course.** To simplify alignment and avoid bulges from the old roofing, the edges of the new shingles are laid flush with the bottoms of the old courses. Cut the starter course of shingles so its width equals the exposure of the old shingles, which in this case (and most others) is 5 inches. Cut off the tabs and 2 inches more from the top of the shingle with a utility knife or tin-snips, until the strip measures 5 inches (or whatever the exposure) from top to bottom. If you are using self-sealing shingles, position the sealant strip slightly above the eave edge.

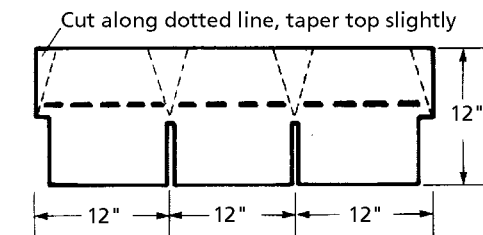
You may choose to use a strip of mineral-surfaced roll roofing instead of the cut shingles. If so, the strip should be at least 7 inches wide. Nail the strip about 3 to 4 inches above the eave. Snap a chalkline as a guide. Lap ends of strips by at least 2 inches.



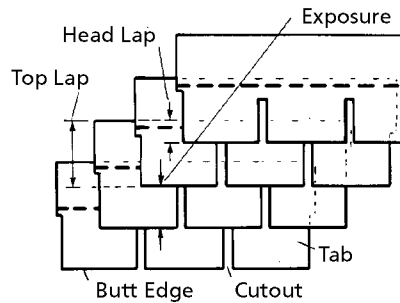
**Always use 4 nails** to fasten on shingles. The Xs mark the spots. The center nails are directly above the cutouts for three tabs, or 11 ins. from the outside nails. Some shingles are marked for nail locations. If not, measure.



**For 2-tab shingles,** four nails are still used to fasten them in place. The nails are 5-5/8 ins. from the bottom, or halfway between the sealant and the cutouts. Use zinc-coated fasteners and drive them straight in.

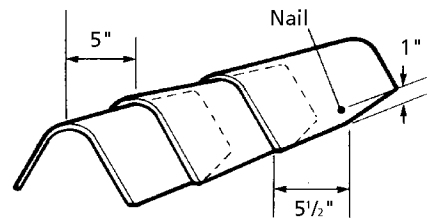
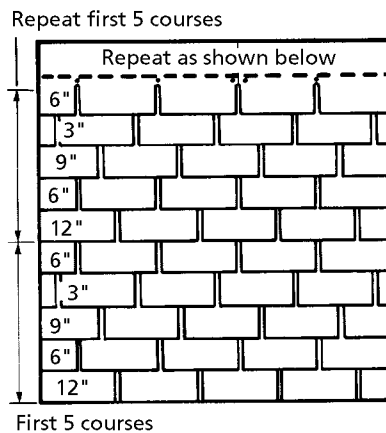


**To create your own hip or ridge shingles,** mark and cut a regular shingle to fit. Apply the shingles from both roof sides; then finish intersection. Bend ridge shingles lengthwise so they extend equal length down roof sides.



Whether the shingles are 3-tab, 2-tab, or have no tabs, the course above laps the course below at the top of the cutouts, as shown. Measure this carefully. When you get the hang of it, the courses will go down fast.

So-called random spacing is created by using this shingle pattern. The shingles must be cut in multiples of 3 inches. Start the first regular course of shingles with a full shingle.



This is the preferred nailing (or stapling) locations for shingles applied to ridges and hips of roofs. Use one fastener on each side, as shown. The exposure remains at 5 inches, same as the exposure of field shingles on the roof.

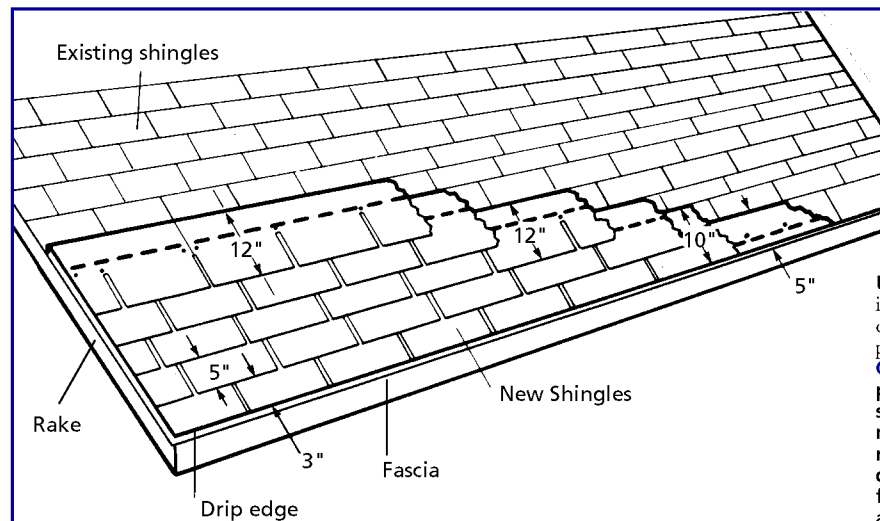
The starter strip should overhang the rakes or eaves by 1/4 to 3/8 inch, which should be flush to the existing eaves shingles. If using self-sealing shingles, position the adhesive strip along the eaves. The shingles should overhang far enough so that water flows into the gutter, not into the exterior wall. If the existing eaves do not overhang this far, cut the starter strip to the width necessary for the overhang. However, do not overlap on the existing course above. Cut off 3 inches from the end of the starter strips first shingle, near the rake. This staggers the joints so that starter-strip shingle joints will be covered once the first course has been applied.

**Laying the field course.** Cut the shingles at the top, 2 inches down from the original edge. Fit the cut edge so that it is flush to the butt edge of the old shingle in the second course, down to the eave edge, covering the starter course. Nail these as for all field shingles, with four nails spaced 5-5/8 inches from the bottom—or about halfway between the top of the tab cut-outs and the sealing material. Never drive nails into the sealant strip.

**Laying the remaining courses.** For the succeeding courses, full-depth shingles are used. The only cutting will be at the rakes. These shingles will all have 5-inch exposures. The top edges of the new shingles should meet the bottoms of the old courses. Butt each shingle against the old ones, but do not force them tightly. Proceed across and up the roof diagonally, until you reach the ridge. Cut at the eaves to match the old eave line exactly. Cut shingles to fit around obstructions. Apply asphalt roofing cement to bottoms of these loose edges and around the joints.

**Alignment patterns.** On gable roofs, it is easiest to start in the far left-hand corner and work both to the right and up in a pyramid pattern. If you are left-handed, you will find it easier to start at the right.

For hip roofs, it is best to start at the center and work to both right and left, as well as up. Alignment should not be a problem when applying new asphalt over old, since the existing shingles serve as a guide.



Use old shingles for alignment when installing a new asphalt strip roof over an old asphalt strip roof. Note in this example that the first course is only 3 ins.

**CAUTION:** When working on a pitched roof, always wear rubber-soled shoes. It is best to reroof on mild days when the temperature is not too hot or cold. Under these conditions, the asphalt shingles are flexible—not too brittle or too pliable from the cold or heat. If the roof pitch is steep, i.e., difficult to walk safely, we strongly recommend that you have a professional roofer do the job.

## STRIP SHINGLES ON BARE DECK

Roofing a bare deck, or a deck that has been stripped bare of shingles, uses the same basic techniques as described before. There are a couple of changes:

**Underlayment.** New underlayment must be laid when working on a bare deck unless you have a flat or low slope of less than 4 ins. rise per foot. If the old shingles have been removed, use an underlayment.

**Watertight surfaces.** If the deck is new, caulk all sheathing joints. Apply drip edges at rakes after the underlayment is on. New flashing has to be installed on a new deck, of course.

**Slope requirements.** On roofs with pitches of less than  $1/6$ , or 4 inches of rise per foot, standard asphalt shingling methods cannot be used. On rises of 2 to 4 inches, square-tab shingles approved for such use by Underwriters' Laboratories (UL) may be applied. They must be used with double underlayment and roofing cement. A special cemented eaves flashing strip is also required. To provide the eaves flashing, a continuous layer of roofing cement is applied at the rate of 2 gallons per 100 square feet, under the entire first row of the underlayment.

**Laying the shingles.** Low slopes require self-sealing shingles that have a factory-applied adhesive, or cement the tabs to the courses below. Use plastic asphalt cement for this.

Pitches less than 2 inches per foot must use roll roofing or some other nonasphalt roofing such as clay tile. Since roll roofing is not recommended for residential use, this process is not described here. Flat roofs usually have a built-up roof, a job for a professional.

Use zinc-coated fasteners and avoid exposure of them. Don't drive the fastener deep enough to break the shingle surface with the fastener's head.

