



**A**s a roofing contractor doing business in my hometown for more than 20 years, I consider it my obligation to give

by John Curran

customers the best value for their money. When their asphalt shingle roof has reached the end of its life, most people assume their only option is to strip the roof to bare sheathing before a new roof can be applied. But unless the sheathing is extensively damaged or the structure can't support the weight of another layer of roofing, a better solution is to apply a new layer of shingles right over the old one. Done correctly, a reroof job will look as good and last as long as a "new" roof, for a lot less money and a lot less hassle.

#### Advantages of Reroofing

Most building codes allow two layers

of organic or fiberglass asphalt shingles on roofs with a 4/12 pitch or less, and three layers on steeper roofs. If the structure can support the added weight, a typical 20-square (2,000-square-foot) reroof will cost at least \$1,000 less than a tear-off job. Labor savings go beyond demolition: Not having to lay down felt paper saves \$10 a square; and site and weather protection, as well as cleanup, are all reduced if not eliminated.

Disposal costs are lower, too, because we don't have to rent a dumpster and we save the \$65-per-ton dump fees. We also save by not having to separate the recyclables. Here in central New York, asphalt, cardboard, and wood all have to be tossed into different containers, and in some cases hauled to different transfer stations. The same is true of flashing, drip edge, tar buckets, vents, and other scrap metal.

**Less liability.** As a contractor in a highly competitive business, I can't

claim that a reroof is a lot more profitable than a tear-off job, but I can say that it's much less risky. There is no chance of a dumpster carving up the lawn or scarring the driveway; there is less risk of property damage from falling debris or from nails that find their way into homeowners' car tires. And because bare sheathing is never exposed to the elements, there is much less chance of weather damage or of an employee being injured while scrambling around in the rain trying to get an exposed roof under cover.

**Equal quality.** All shingle manufacturers honor the warranty, whether their products are used for a reroof or a new roof. If the job is done correctly, with the new layer of shingles laid flat over the existing shingles, the old roof cushions the new one and serves as a secondary barrier should wind or water ever break through the new shingles.

# The key to a flat roof is a filler strip in the first course

## Evaluating the Job

Because my company does both tear-off and reroof work, I evaluate each job to determine which procedure is best. Whenever I'm called to give a roofing estimate, I always ask the callers to tell me why they think they need a new roof. Have they noticed leaks and stains, or is it simply because their neighbors are replacing their roofs? I also ask about the age and apparent condition of the roof. If the roof is, say, eight years old, it probably just needs a repair. If it's 15 years old and they've noticed loose granules washing off the shingles or running out of the downspouts, it's a reroof candidate. When they tell me what neighborhood they're in, I can also make a good guess about how many layers of shingles are already on the roof.

When I arrive to inspect the site, the first thing I look at is not the roof but the condition of the house and the quality of any recent work that might have been done to it. We do high quality work and we charge more than the average fly-by-nighter. If a house looks like no one cares, I want to find out what kind of work the owners are looking for before I invest a lot of my time.

I always walk the roof. A contractor who only does tear-off work can figure a job standing on the ground with a tape measure and a pair of binoculars. Not me. I can't be sure that reroofing will work until I've thoroughly inspected every inch of the roof. Sometimes it's an easy decision: If I peel the shingles back from the rake edge and count three or more layers, and if most of the shingles are badly curled, the permanent step flashing is badly deteriorated, or the deck feels soft and spongy wherever I step, it needs a tear-off.

Even if the structure can support the added weight, the new roof won't last unless it's laid flat over smooth shingles, intact flashing, and sound sheathing. Localized problems, like a few missing shingles or one or two soft spots in the sheathing — at the mouth of a valley, for example, or around pipes or at the bottom of the chimney — can be easily repaired, but beyond that it's more efficient to do a complete tear-off. I also rule out reroofing if a careless prior reshingling has left the roof with a washboard surface.

If reroofing is warranted, I measure the existing shingles to determine whether they're standard (12x36 inches) or metric (13x39 inches). The new shingles must be the same size as the old ones or installation will be a nightmare. While I'm on the roof, I also measure the exposure of the existing shingle courses and eyeball their horizontal straightness. If the old roofing is extremely wavy or if the exposure varies more than 1/4 inch from the standard 5 inches (5 5/8 inches for metric shingles), I won't be able to follow the existing lines, so I'll have to allow more labor time for snapping chalk lines and using gauges to ensure a first-rate job.

## Prep Work

The best thing about beginning a reroof job is the sound sleep I get the night before, because I don't have to worry about everything that could go wrong between tear-off and dry-in. Even if a freak thunderstorm should strike without warning, there's no need to panic. We just calmly seek shelter until the storm passes, then get right back to work. Any rainwater that gets between the new surface and the old will evaporate.

The average reroof requires at least two full pallets of shingles, which I have delivered a few days before the job starts. For a nominal additional charge, some of my suppliers will place the bundles on the roof and scatter them according to my instructions. When I can't get rooftop delivery, I coordinate with the homeowners and give my supplier specific instructions about where to place the load. I don't want the homeowner coming home from work to find 60 bundles of shingles blocking the garage.

I like to use a five-man crew for reroof jobs: a crew chief, two roofing mechanics, one laborer, and one laborer-trainee. While the other guys are unloading, setting up ladders, and stocking the roof, the crew chief will walk the perimeter of the house looking for anything fragile that might need to be moved or protected. He'll also be on the lookout for pre-existing damage that the homeowners might not have noticed. If he finds a loose railing or a cracked basement window, he'll let them know about it so we don't take the blame later on.

Because we're not doing major demolition, we don't have to take the elaborate site-protection measures I insist on when we do tear-offs. We will, however, lay plywood over air conditioning units and over any flat stepping stones that might get scratched. We've also learned the hard way to always protect expensive plants with a plywood tent, and to lay sheets of cardboard under any of our vehicles parked in the driveway to catch oil leaks.

After the roof is stocked, the laborers pry up several layers of cap shingles at a time and toss them into plastic trash



**Figure 1.** The roofing crew uses a Red Ripper roofing demolition tool to pry up cap shingles, which are collected in a plastic bin, along with old boot flanges and any loose shingle tabs.



**Figure 2.** Depending on the type of job, the author uses several specialty drip edge profiles, including one with an extra-long leg designed to cover existing shingles and drip edge (at right in photo above). A single length of drip edge wraps roof corners, with the rake flashing overlapping the eaves for good drainage (right).



bins (see Figure 1). Sometimes they use a standard gardener's "potato fork," but the best tool for the job is a Red Ripper (Integrated Roofing Technologies, 2413 Stevenage Dr., Unit 11, Ottawa, Ontario K1G 3W1 800/352-6147). They also pry up and discard the old vent flanges, and start new boot flanges over the tops of the pipes. At this point, the prep crew also cuts out and replaces any bad sheathing, and fills in any missing shingles with scrap pieces to give the roof a sound, uniform surface. Finally, they'll use a hook blade to cut back the bottom 2 inches from the third course of existing shingles (12 inches up from the drip edge). This will make starter course lay-out easier.

After the messy work is done and the trash bins have been emptied into the back of the company pickup truck, the roof is swept clean, then drip edge is scattered along the perimeter of the roof and nailed in place. We use a special drip edge, called Overhang Drip (model DE6, Caliber Metals, 23500 John Gorsuch Dr., Clinton Township, MI 48036; 810/465-7650), which is made to fit over the old drip edge and shingles (Figure 2). We run the metal along the eaves first, then up the rake edges, always lapping a higher piece over a lower one for good drainage.

While this is happening, one of the laborers separates the bundles of shingles into thirds and scatters them on the roof. This puts the shingles within easy reach of the shinglers, who won't lose time hunting and reaching for fresh material. The other laborer makes all the precut shingles we'll need later: inverts, one- and two-tab shingles, and caps. An invert is the 5-inch-wide top half of a full shingle; caps are one-tab shingles with the top corners tapered to ensure the exposed edges follow a straight line.

### Starting Out Right

The efficiency of the job and the longevity of the roof depend on carefully laying down the starter courses along the eaves. To prevent ice dams up here in snow country, we first run out a 36-inch-wide layer of AC EavesSeal (NEL, 50 Pine Rd., Brentwood, NH 03833; 800/998-

4634; [www.nei-act.com](http://www.nei-act.com)). Intended for reroof work, this membrane has a 4-inch-wide self-adhesive leading edge that adheres to the new drip edge; the top edge is nailed (Figure 3).

**Efficient layout.** While the membrane is being applied, my crew chief will “map out” the roof to find the most efficient and most attractive layout for the shingles. Many roofers simply start at the rake edge with a full shingle and let the tabs fall where they may. I do the same with architectural shingles, because there are no tabs to align. But with tabbed shingles, I prefer to shingle outward from a pair of vertical center lines. This not only enables me to keep two people nailing without tripping over each other, it assures me that the shingle tabs will align vertically because they won’t be affected by any waviness in the rake edge. It also means the shingles on the ends of each course will be close to the same width. We do, however, measure back to the rake edges and to any dormers, skylights, or chimneys to make sure we won’t end up with skinny tabs, which invariably break off and look terrible. After making any adjustments back and forth, we snap the center line, then a second, parallel line 6 inches over — it doesn’t matter which side. To create a stepped pattern, succeeding courses will alternate between these lines as we work our way up the roof.

**Butting up.** For the new roof to lay flat, the top edges of the new shingles must butt up against the tabs of the old ones (Figure 4, next page). The trick is to use pre-cut “invert” shingles as filler strips. Beginning at one vertical chalk line, we use 5-inch-wide “inverts,” tar spots pointed towards the eaves, and align the bottom edge with the drip edge. This course gets nailed at the bottom, just above the tar spots.

The first full course is aligned with the second chalk line. Because earlier we cut the top layer of existing shingles back 12 inches from the eaves, we can run full-width shingles, overlaying the inverts and laid flush with the drip edge. The second full-width course of shingles is laid out back at the first chalk line and butted up against the bottom edge of the



**Figure 3.** To guard against damage from ice dams, a 36-inch-wide strip of bituminous membrane is rolled out along the eaves. After lightly nailing the top edge, the membrane’s 4-inch-wide adhesive strip is pressed onto the new drip edge to form a tight seal.

fourth course of old shingles. We butt up succeeding courses until we get above the 36-inch-wide eaves membrane, at which point we can really fly.

**Pyramid pattern.** Despite the manufacturers’ assurances, we find that shingle sizes are inconsistent. To ensure straight vertical lines, and to avoid that wavy pattern you see when material varies from bundle to bundle, we lay our shingle courses in a pyramid shape (Figure 5). We start by running one column of three-tab shingles nearly all the way up to the ridge, alternating each course back and forth between the two chalk lines. Returning to the bottom, we cover a triangular area on each side of the column, stacking six courses of three-tab, two-tab, and one-tab shingles. Next, we fill in with full shingles until our courses reach the top of the pyramid, then we repeat the procedure.

**Reroof nailing.** On an average job, we run three air nailers off one Emglo gas-powered compressor (Emglo Air Compressors, 303 Industrial Park Rd., Johnstown, PA 15904; 814/269-1000) that we leave on the ground. To keep the hoses from tangling, we run one thick lead hose from the compressor to the roof and branch off from there.

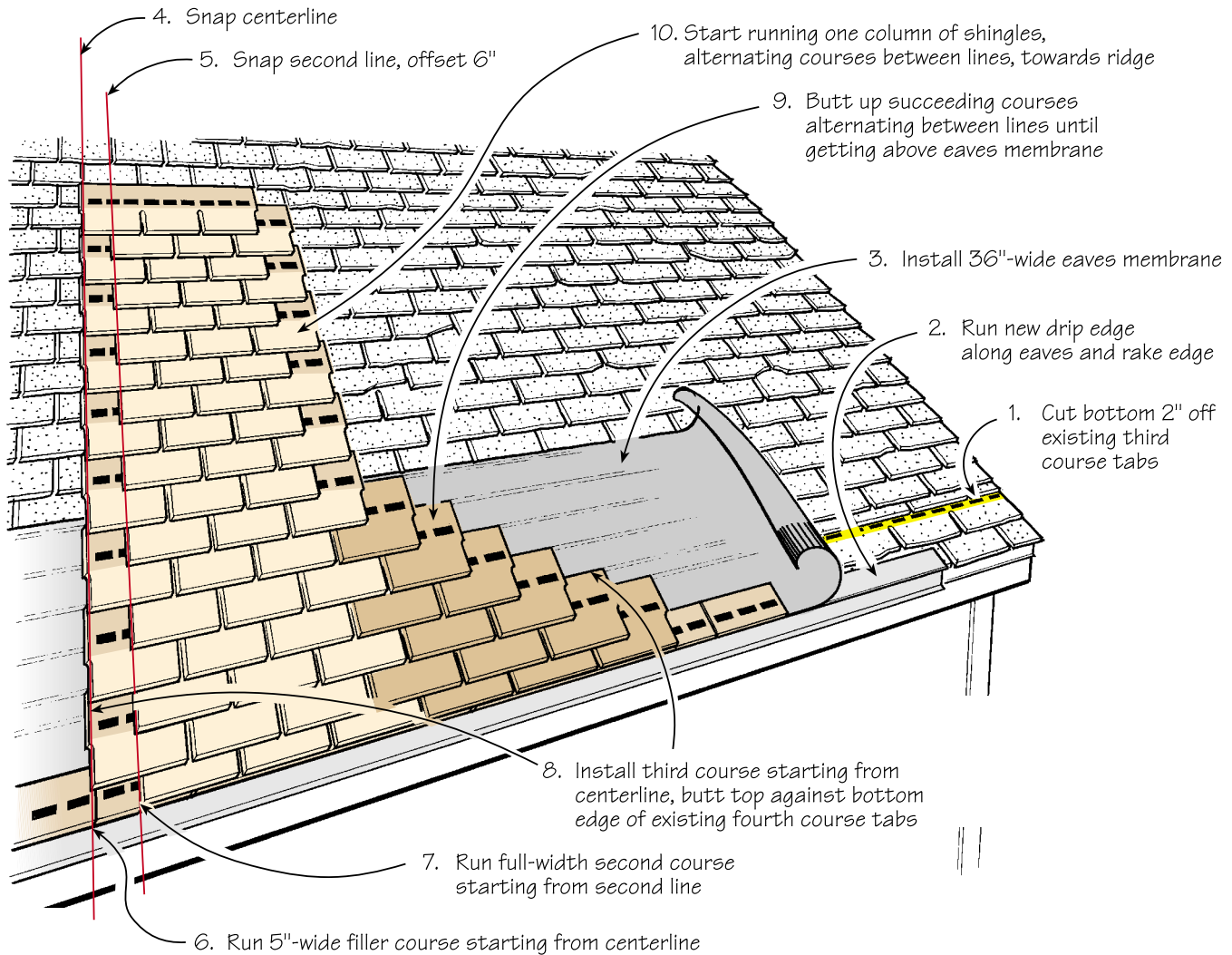
We use standard round head roofing nails in our guns, 1½ inches long when we’re covering one layer of old roofing, 1¾ inches for two layers. Condensation forms on the tips of nails that protrude into attics, so I try to use the shortest nails possible. We follow standard nail-

ing patterns — four nails per shingle with the two center nails located just above the cutouts. The exception is at the edges, where we hold our nails back 1½ inches instead of the 1 inch called for by roofing manufacturers. We do this because we are nailing over a resilient surface, and when the nails are placed too close together they can make a depression that can be seen from the ground. There is no disadvantage to spreading the nails out as little as we do.

**Valleys.** Before our shinglers reach a valley, we flash it with a 36-inch-wide layer of 90-pound mineral-surfaced roll roofing. If it’s a full-length valley, we lap the flashing over the eaves membrane and run it to the drip edge. If it’s a dormer, we run the flashing past the beginning of the valley and lap it over the new shingles in the course below.

When it comes to shingling a valley, I prefer the closed-cut approach because it offers the best combination of protection and efficiency. To make a closed-cut valley, we run up all the shingles for one side, making sure they extend at least one full tab (12 inches) past the centerline of the valley (Figure 6). We also make sure to keep all of our nails at least 8 inches back from the center. When we do the other side, we run all the shingles far enough so that we can snap a chalk line through the center of the valley and cut a nice straight line with a hooked roofing blade. When we do a dormer, we always run up the dormer shingles first so the water from

# Laying Out the Starter Course



**Figure 4.** To ensure that the new shingles lay flat, the author first cuts 2 inches off the third course of existing shingles, then rolls out a 3-foot-wide self-sticking membrane, flush with the new drip edge. The new roof begins with 5-inch-wide filler strips, or “inverts,” laid out from one of two vertical chalk lines snapped at the center of the roof. The first full-width course of new shingles overlays the filler strips and butts against the cut-back edge of the existing shingles, which telegraphs through the membrane. Succeeding courses butt the tabs of the existing shingles, leaving an exposure of 3 inches at the eaves, and a standard 5-inch exposure the rest of the way up the roof. One roofer can then lay a “column” of three-tab shingles, alternately aligned with the two chalk lines. A second roofer fills in a triangular area to either side of this column using precut pairs of three-, two-, and one-tab shingles.

the main roof can't run under the dormer shingles.

**Permanent flashing.** When I was young and foolish, I used to take pride that I cared enough to cut loose all the old step flashing and reweave it into the new roofing. It cost a lot of money to do that, and the homeowners never noticed it, so I stopped. The truth is, as long as the flashing was done right the first time and hasn't rotted away, it's better left in place.

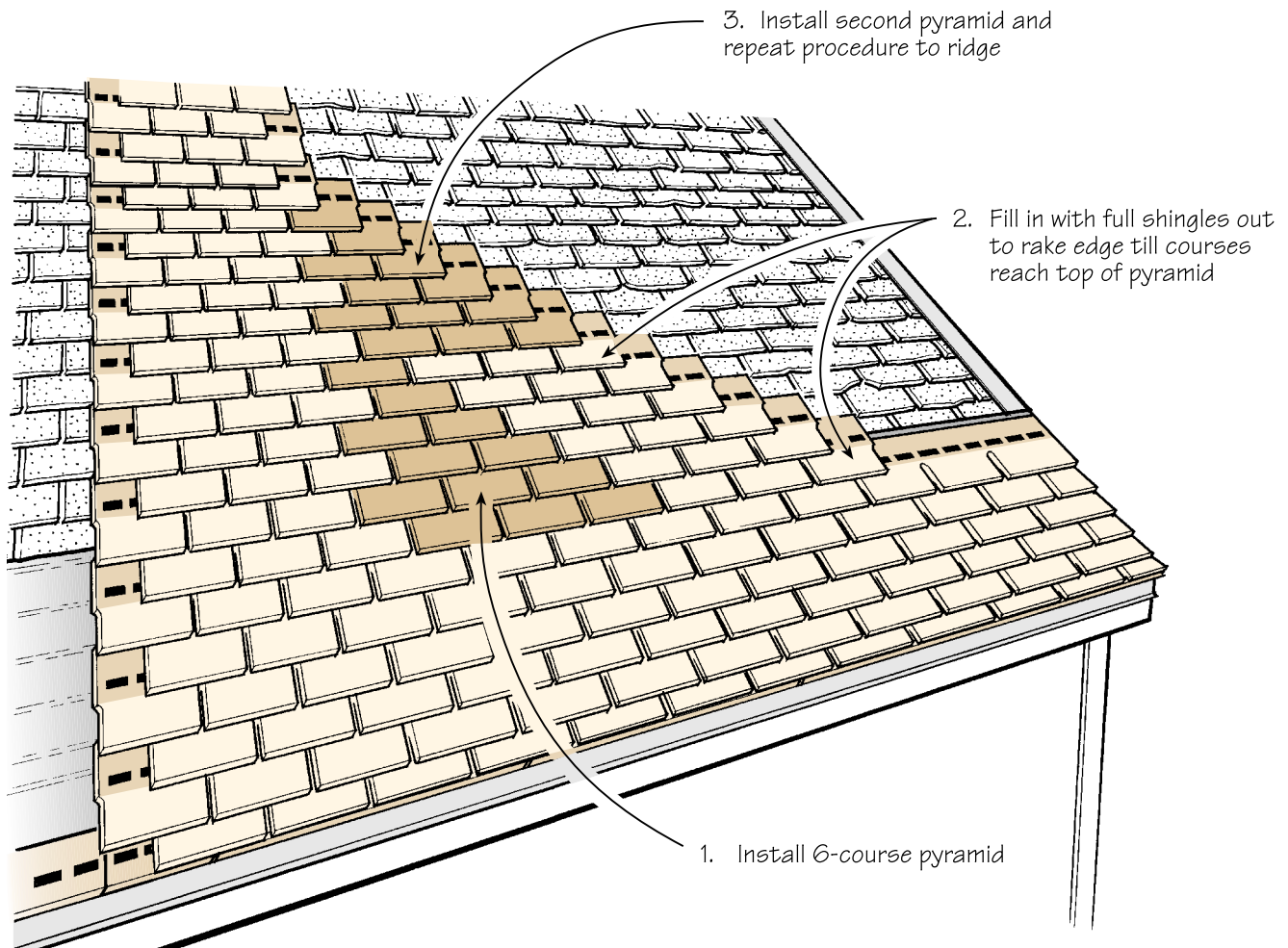
When we shingle up to dormers, chimneys, or skylights, we still peel up the bottom edge of the flashing and tuck the new roofing underneath. Then, as we work our way up the sides, we bed each shingle down onto a thick bead of roof cement along the edge where the shingle meets the wall line. We also lay a large bead of tar under the shingles where they meet the head flashing. Contrary to popular belief, as long as the cement is covered by the roofing, it

will serve for the life of the roof.

## Capping Off

When we reach the top of the roof, we fold the last courses over the ridge and cover them with cap shingles. To ensure a straight line, we measure down 6 inches from the center of the ridge on the most visible side, and snap a line. We run cap shingles from one end of the roof to the other, aligning the edges with the chalk line, and placing one nail

# Using the Pyramid Pattern



on either side of the ridge, just behind the tar strip, which will be covered by the next shingle. The final cap will be a 5-inch piece or less, and we cover the exposed nails with tar.

**Ventilation.** When the attic needs more ventilation, I like to install a low-profile shingle-over ridge vent, because it does the job, yet blends into the roofline. We like either the Omni-Ridge (Lomanco, P.O. Box 519, Jacksonville, AR 72076; 800/643-5596;



**Figure 5.** Every six courses, roofers on either side of the center column of shingles fill in a triangular area using pairs of three-, two-, and one-tab shingles (illustration). This resulting “pyramid” pattern ensures proper alignment of the tabs and enables several roofers to work without getting in one another’s way.

Shingles are nailed with pneumatic coil nailers (photo). Because the existing roof has some give to it, nails are held back 1½ inches from the shingle edges to avoid creating dips that can be seen from the ground.



**Figure 6.** Valleys are first flashed with 90-pound roll roofing. Then shingles from one roof plane are laid so they extend one tab beyond the valley center. Shingles from the other roof plane are overlaid, then cut back with a hooked knife to form a “closed” valley.

www.lomanco.com) or the ShingleVent II (Air Vent, 4801 N. Prospect Rd., Peoria Heights, IL 61614; 800/247-8368), because they both have an external baffle that keeps snow and driven rain out of the attic. After the roofing and sheathing are cut out, we hold the ridge vent to the same chalk line as the caps and nail it in place. We run cap shingles over the top of the vent, using 2½-inch roofing nails to reach the sheathing.

### Customer Satisfaction

No job is successful unless the customer is satisfied. At the end of every day, we sweep up the site and pick up nails from the driveway and short grass with a Magnet Nail Sweeper (Hilco, P.O. Box 1789, Hickory, NC 28603; 704/328-8141). When the job is finished, we do a final sweep from the ridge down with

a wide soft-bristle broom. We also clear roof debris from the gutters and thoroughly sweep the driveway, front steps, walkways, and anywhere else debris may have settled. We want it to look like we were never there, so we make sure to put anything that we had to move back in its place.

Finally, before the last ladder is taken down, I take a can of black or aluminum and paint the vent pipes, chimney flashing, and furnace flange. This not only makes my work look its best on the day I leave the job, but it prevents rust stains from making my work look bad in the future.



**John Curran** and his wife, Jan, own and operate RSI General Contractors, a Syracuse, N.Y., roofing, siding, and insulation company founded in 1978.