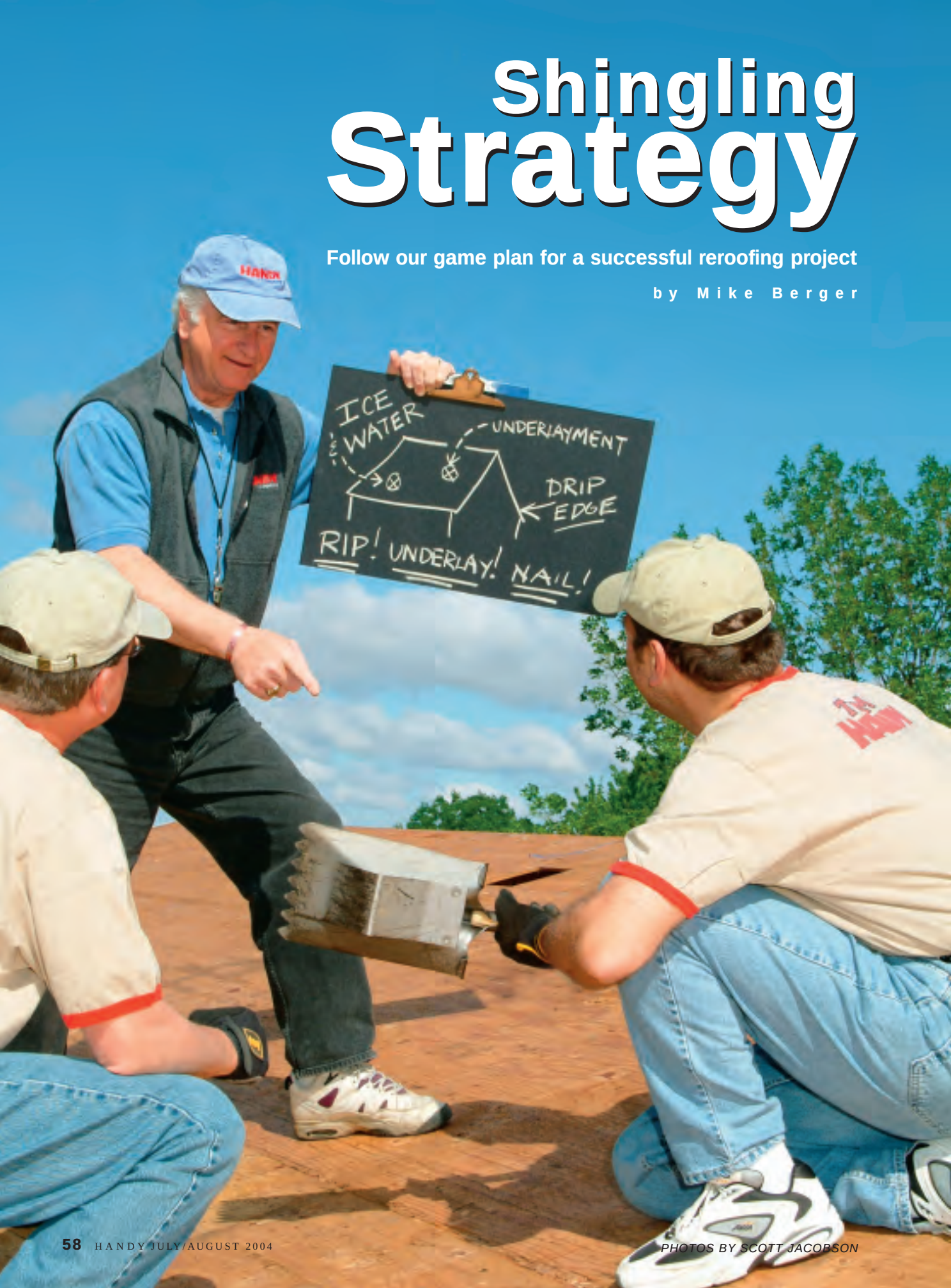
Shingling Strategy

Follow our game plan for a successful reroofing project

by Mike Berger



PHOTOS BY SCOTT JACOBSON

It's big. It's intimidating. And it can feel like its only purpose is to cause you pain and frustration. No, it's not the 1978 Pittsburgh Steelers; it's your roof. When you know your roof needs to be replaced, dread and fear may keep you from tackling the job yourself. But understanding the steps in a reroofing project is like finding the weaknesses in an opposing team: Once you discover how best to exploit them, you gain the confidence to rise to the challenge.

Besides the thrill of victory, tackling your own shingle installation can cut your costs by more than 50 percent. (Even if you decide to hire a contractor, a better understanding of the roofing process is a plus because it will enable you to better choose a qualified professional.) Unless you have a steeply pitched roof or one with complex flashing or numerous valleys or dormers (which are beyond the scope of this article), you can complete the project in a long weekend with help from a few friends.

The players

Think of the materials involved in a reroofing project as a team whose goal is to protect the home's roof decking. Your team's most valuable players are the shingles. Available in standard (the most common type) or architectural designs (with enhanced shadow lines to create visual depth), shingles are rated by the years of their warranty — the longer the warranty, the stronger the shingle. For our project, we used Georgia Pacific's Summit series architectural shingles (see SOURCES).

Shingles are sold by the square; each square covers 100 sq. ft. To determine how many squares of shingles you'll need, calculate the area of your roof (in square feet), divide by 100 and add 10 percent for waste.

Just as a quarterback needs a strong offensive line, even the best shingles are helpless without proper underlayment. Whether it's roofing felt (also called building paper) or polypropylene underlayment (such as the Typar RoofWrap we used), a proper secondary water barrier keeps storm damage or wind-driven rains from penetrating the decking and causing leaks.

Ice-and-water membrane and drip edges serve as the roof's defensive line, each performing a specialized task. Ice-and-water membrane (such as Tarco's LeakBarrier) adds a second layer of protection against hail, heavy

TYPICAL ROOFING COMPONENTS

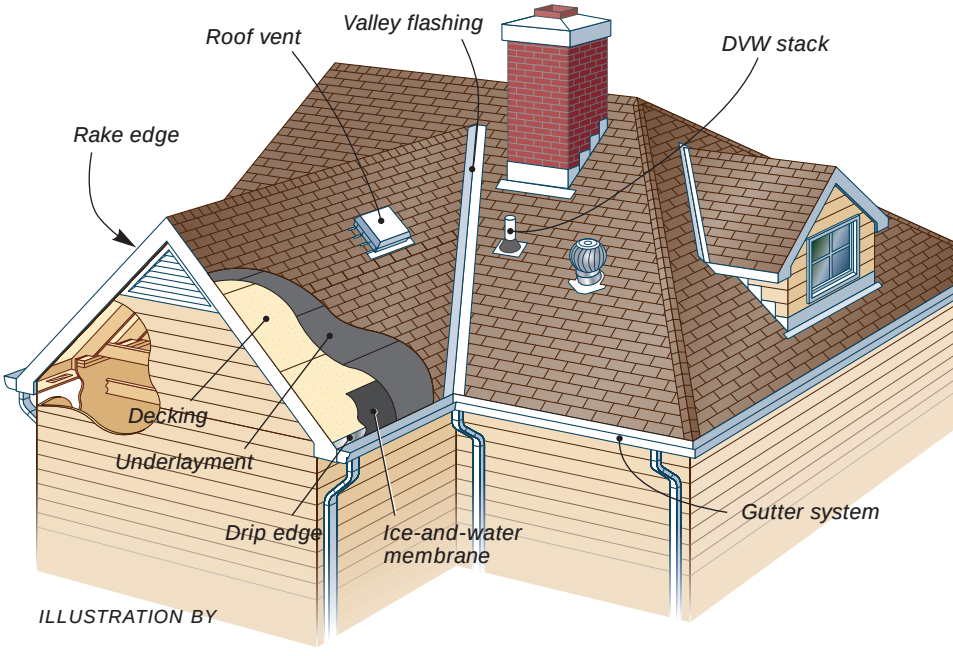
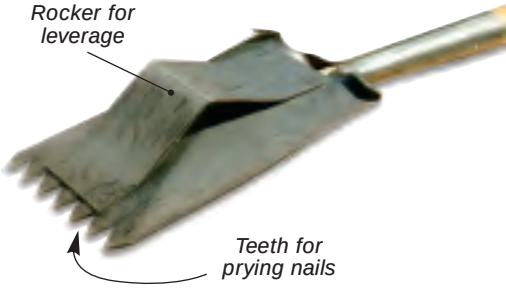


ILLUSTRATION BY



A roofing shovel has a serrated blade to tear off shingles and remove nails and staples. The rocker on the back of the blade provides prying power.

Use a roofing shovel to strip off the old shingles and underlayment. Be sure to remove all nails and staples.

Typical fasteners for a roofing project include staples, roofing nails (both standard and plastic-cap), and coil nails for roofing nailers.

rain, water infiltration and ice dams along the eaves, your roof's most vulnerable point. And drip edges channel water into gutters to prevent it from seeping under the first row of shingles. When installing drip edges, match the nails with the drip edge material. Use aluminum nails with aluminum drip edge, and galvanized nails with galvanized drip edge.

Preparing the field

One of the first decisions you'll need to make is whether to tear off the old shingles. In some cases you can leave the old shingles in place and install new ones directly over them. (Check with your local code authority before making this decision.) However, removing the old shingles offers advantages: You can inspect the decking and repair any damage, and you can install additional weatherproofing products such as ice-and-water membrane.

Tearing off old shingles is physically demanding but requires no special skills — you just need a roofing shovel (see middle photo, p. 59), a trash bin from a local disposal service and a lot of determination.

You'll start at the ridge and work your way down. Use a pry bar to remove the shingles covering the ridge; then slide the tooth edge of the shovel beneath the top edges of the shingles and pry up. Rock the shovel forward as you pry, and try to pull out as many of the roofing nails or staples as possible (photo 1, p. 59). If some fasteners remain, work them free with a pry bar.

Next, remove the old drip edge as well as any roof vents, and inspect the exposed decking for damage. Replace any damaged areas. When you've removed all nails and staples (or driven them flush), sweep the decking clean.

Use 1-1/4-in. roofing nails to attach new drip edge to the eaves. Set nails every 16 in., and overlap sections of drip edge to ensure consistent protection.

Carefully position ice-and-water membrane, and have a helper hold it in place. Gently pull away the backing to expose the adhesive, and press down to adhere the membrane.

Defense on the field

The first step in the installation process is to install new drip edges along the eaves. Drive a nail every 16 in. through the drip edge to secure it to the sheathing (photo 2, above). For this installation we had straight runs, but drip edge can be easily cut to fit around corners.

If you live in a severe climate area, your next move is to install ice-and-water membrane. Because of its adhesive backing, the membrane must be carefully aligned as you roll it out. Peel the backing from the first 2 ft. of the roll; then place the roll along the drip edge, allowing about 1/4 in. overhang. With a helper holding the exposed end in place, unroll the membrane, following the drip edge and allowing for the same uniform overhang.

When you have unrolled and positioned the membrane, gently pull away the plastic backing (photo 3). Work slowly and press the membrane to the sheathing as you go to ensure proper adhesion. Local codes will dictate how much of the sheathing must be covered by the membrane as well as the overlap requirements. (A 6-in. overlap both horizontally and vertically is common.)

To provide protection in the event of shingle damage from storms or snow, install underlayment over the rest of the sheathing. In the past, roofers used 30-pound roofing felt, but new products (such as Typar's RoofWrap 30) offer benefits such as

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Understanding roof pitch

Roof pitch is usually expressed in a ratio that shows how far the roof extends out (the run) compared with the height of its profile (the rise). For example, a 3:12 roof rises only 3 ft. for every 12 ft. of run. A 6:12 roof rises 6 ft. for every 12 ft. of run, and a 12:12 roof creates a 45-degree angle as it rises 12 ft. for every 12 ft. of run. Although any roof slope can be dangerous, a roof with a pitch steeper than 6:12 is especially hazardous. Carefully consider how comfortable you are with working at heights and on such a slope. (Being overconfident can be just as dangerous as being fainthearted.) It may be worth hiring a professional simply for peace of mind. — *MB*

Fasten the underlayment to the decking. We used staples, but if the underlayment will be exposed to the elements for a lengthy period of time, use plastic-cap roofing nails.

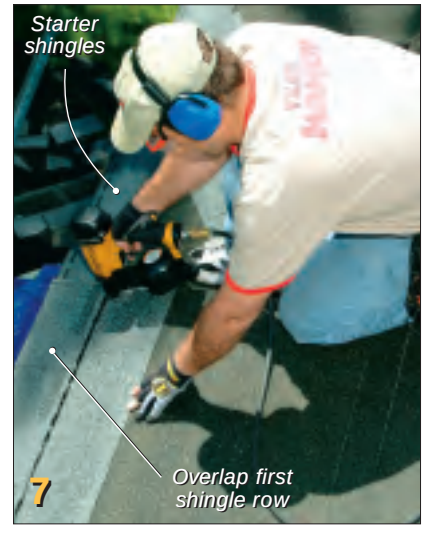
Apply drip edge to the roof rakes to enhance the performance of the underlayment and achieve a longer-lasting roof.

Snap a line to indicate the placement of the starter shingles. Use red chalk because it withstands foot traffic and won't rub off as easily as blue chalk.

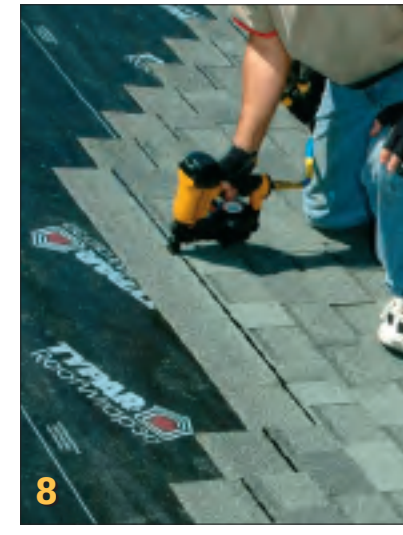
lighter weight, higher tear strength and better long-term warranties.

Installing underlayment is similar to installing ice-and-water membrane, except that underlayment has no adhesive. Roll it out following the manufacturer's overlap recommendations, making sure that the lower runs of underlayment are overlapped by the upper runs, and fasten it to the sheathing (photo 4, above). We used staples, but you may need to use 1-in.-dia. plastic-cap roofing nails.

The final preparation step is to fasten lengths of drip edge at the rake edges with 1-1/4-in. roofing nails driven every 16 in. (photo 5). Start at the bottom and overlap the drip edges at the eaves.



Nail a course of starter shingles along the chalk line; then nail the first course of full shingles directly over and flush to the starter course.



Fasten subsequent courses of shingles in a staggered pattern. Follow the manufacturer's instructions for the recommended offset.

Scoring with shingles

Once the new underlayment is in place, you're at the 50-yard line; next you need to install new shingles and vents. The process we describe is specific to Georgia Pacific's Summit series shingles; make adjustments as needed to suit the brand of shingles you choose.

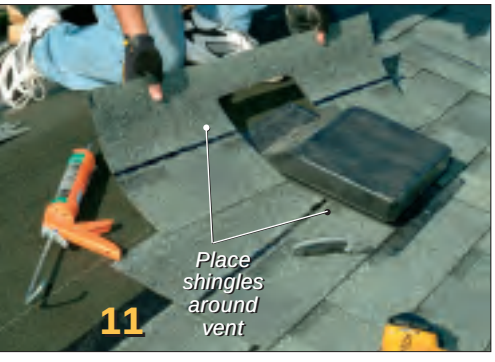
Shingles are designed to protect the decking by forming two layers as each row overlaps the previous one. To create the correct overlap at the eaves, you'll need to first install a starter course of shingles. (Some brands offer ready-to-install starter shingles; others require you to make your own by cutting away the tabs of a standard shingle).

You'll need a straight line for the starter course, so measure for a 1/4- to 3/8-in. overhang at the drip edge and then snap a chalk line (photo 6). Align the starter shingles with the chalk line, and attach them following the manufacturer's recommended nailing pattern, starting at one rake edge and working toward the other.

Next, nail the first row of full shingles directly over and flush with the starter course (photo 7). Place the shingles close together, but do not crowd them. After you've attached the first row of shingles, nail the second row in place.

To keep the seams of this and all subsequent courses of shingles from aligning, you need to create an offset pattern — follow the manufacturer's installation instructions for the recommended offset, as it varies by brand and shingle style (photo 8).

For the shingles we used, Georgia



To attach a vent cover, first apply roofing cement to its underside; then place the vent over the opening and nail it to the decking. Abut shingles on each side of the vent cover, and then cut and install a shingle to fit over the top of the nailing flange.

Pacific specified that we offset the first full shingle in the second course 9 in. from the rake edge. For the third row, we offset the first full shingle 18 in., and for the fourth, we aligned the first full shingle directly with the rake edge. For all subsequent rows, we simply repeated the process from rows two, three and four to create a staggered appearance. What ever pattern your brand requires, simply let the shingles overhang the rake edge as you create the pattern. You can cut them all parallel with the rake edge when you're finished.

As you work you way up the roof, occasionally check that the shingle courses are straight by measuring up from the eaves. If you find that you've drifted, make small adjustments over a series of courses rather than one large adjustment in a single course.

When you reach an opening for a roof vent cover or plumbing stack, install a row of shingles so that they extend halfway up the opening. Apply roofing cement to the underside of the vent cover or plumbing stack flashing, set it in position and nail it in place. Install the shingles for the next row so that they continue the offset pattern, abutting the cover or stack and covering its flashing. (You'll need to cut partial shingles to continue the pattern.) Then cut the top shingle to fit around the vent cover, and nail it in place photos 9-11, left).

Special ridge shingles are used to cover the crown of the roof. If your brand doesn't offer ready-to-install ridge shingles, you can make your own from the tabs cut off of full shingles.

Depending on the brand of shingles, you'll cover the roof ridge with special manufactured ridge shingles (as was the case with Georgia Pacific) or make your own from tabs cut from full shingles. Either way, first snap a chalk line for alignment purposes on the most visible side of the house. Wrap a ridge cap over the ridge (aligned with the chalk line), and fasten it with two roofing nails. (If there is a prevailing wind direction, work toward it.)

Nail the rest of the ridge caps in place, allowing for a 5-in. exposure (photo 12). For the last cap, seal the exposed nails with roofing cement. Then collect any remaining debris, call the disposal service to arrange for removal of the trash bin, and celebrate with a victory party. After all your hard work, you deserve it. ◆

Safety on high

Personal fall-arrest systems (PFAS) are a smart investment if you'll be working on even a moderately pitched roof. A basic PFAS kit consists of a webbed body harness, a shock-absorbing lanyard, a heavy-duty nylon lifeline and metal roof anchors. The lifeline fastens to the roof anchor, and the lanyard connects you (in the body harness) to the lifeline (with a locking cam). As you need to move around the roof, you can slide the cam up or down the lifeline by hand. Any sudden jolt to the cam locks it against the lifeline and prevents you from falling. The body harness then distributes the jolt of the rope across your body to help reduce injury. — *MB*

SOURCES ONLINE

For online information, go to www.HandymanClub.com and click on SOURCES ONLINE.

Bostitch (RN46 coil roofing nailer)
800-556-6696

Georgia Pacific (Summit series shingles)
800-284-5347

Jackson (Roofer's spade)
800-833-3068

Reemay Inc. (Typar RoofWrap underlayment)
800-284-2780

Tarco (LeakBarrier ice-and-water membrane)
800-365-4506