

METAL ROOF RETROFITS RESONATE ON THE HOME FRONT



Tough, energy efficient and able to withstand severe weather, metal roofs are becoming a top choice in the residential sector

**By Susan Bady,
Contributing Editor**

Frustrated by the failure of asphalt shingle roofs to live up to their warranties, many homeowners are turning to metal roofs as a replacement. Thanks to its longevity, energy efficiency, and ability to withstand harsh climates and extreme temperature variations, metal roofing is gaining favor with both contractors and consumers.

This article references single-skin and insulated metal panel (IMP) systems, including standing seam and stone-coated metal roofs. Also provided are tips for avoiding roof leaks and prolonged maintenance that may result from poorly installed fasteners.

"Many clients are tired of re-roofing

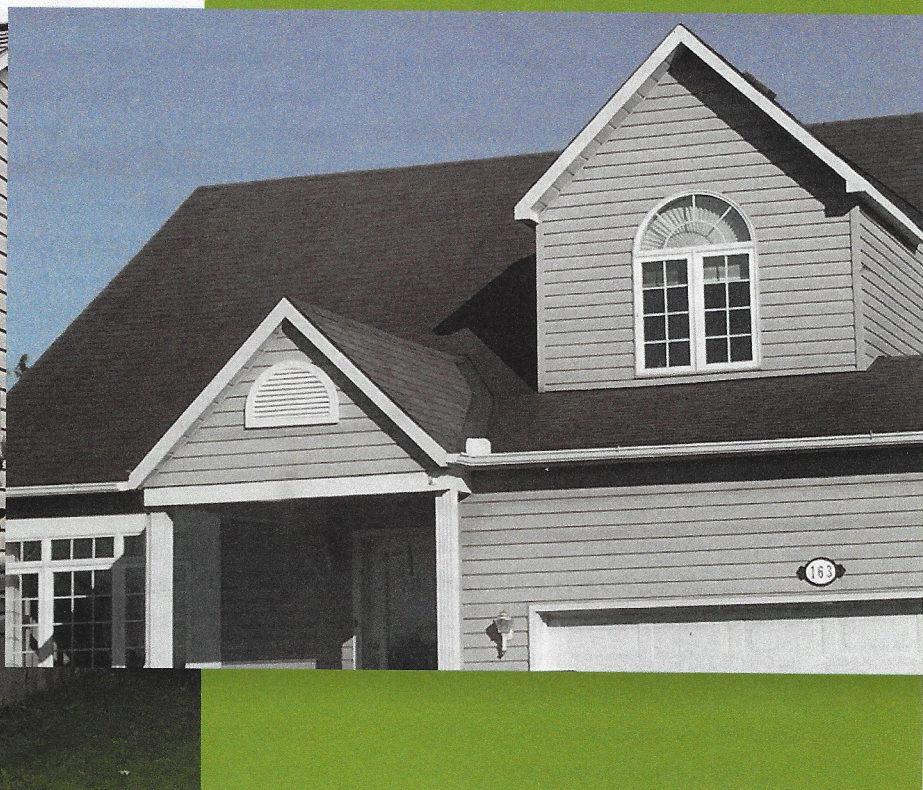
their houses with asphalt shingles and are researching the options out there," says Philippe LaPlante, sales manager for Ideal Roofing, a manufacturer based in Ottawa, Ontario, Canada.

While asphalt shingles may be warranted for up to 30 years, their actual life expectancy is closer to 15-20 years, and in some cases much less, says Todd Miller, president and owner of Isaiah Industries Inc., a Piqua, Ohio-based manufacturer.

"In very mild climates, asphalt shingles may last close to 20 years, but in regions with harsher weather, most roofs are being replaced after five to seven years," says Miller.



Shown is the retrofit, before and after, of a mansard-roofed home in Ohio. The upper part of the roof was replaced with standing seam metal roofing and the lower part with steel shingles. Distinctive Metal Roofing of Avon, Ohio, installed the new roof with materials manufactured by Isaiah Industries Inc., Piqua, Ohio. (Photos: Distinctive Metal Roofing)



Frank Farmer, president and owner of American Metal Roofs, a contractor based in Flint, Mich., says underperforming asphalt roofs are driving brisk sales of metal roofing in residential markets from coast to coast. This is corroborated by the Metal Roofing Alliance (MRA), which reports that the total market share for metal roofing in North America increased from 3.7 percent in 1998 to 11 percent in 2015 and 14 percent in 2016. Between 2015 and 2016, total demand increased from 17.7 million squares to 19.4 million squares (one square equals 100 square feet).

With warranties that typically run 40-50 years, metal roofs are a sensible

choice, especially for homeowners who are 50 years old or older and intend to stay in their homes for the long term.

A metal roof costs approximately two or three times as much as an asphalt roof. The MRA reports that the average asphalt roof replacement costs \$350-\$900 per square, compared to \$800-\$1,500 per square for a metal roof. But the shingles require frequent inspection, repair and replacement, and once removed, they wind up in landfills where they'll take up to 300 years to decompose. Metal roofs are permanent, and therefore sustainable.

"Pollution is getting worse and landfills are being filled to the point

where we no longer have any room to dispose of our waste," says LaPlante. "Metal is recyclable and could become the norm for the roofing industry."

CHOICES AROUND

Another important attribute of metal roofing is its visual appeal. "People take pride in their homes and have been spending more money to distinguish them from [neighboring properties]," LaPlante says. "A metal roof will still look as good as new after 10 to 15 years."

Metal roofing is made of aluminum, copper or steel and available in styles that complement the architecture

of any home. With their distinctive, timeless look, standing seam roofs have long been a mainstay of both new homes and retrofits, but interest is also growing in metal shingles, shakes and tiles, which can be designed to look like wood, clay tile or natural slate. A vast array of colors is available, and metal roofs can be repainted, if necessary, instead of being replaced.

Approximately 80 percent of the residential metal retrofit market consists of vertical standing seam roofing, Miller says. Specialty products such as shingles account for the other 20 percent.

The MRA states that demand for metal roofing is projected to rise in regions experiencing climate extremes and where environmental awareness is high, such as Arizona, Colorado, Oregon, Washington and the southern states. The MRA notes that a metal roof protects the home against fire, wind, water and snow, including hail and salt air. Metal shingles and shakes, in particular, are taking a stronger hold in areas where wood shakes are being used less and less due to the increased risk of fire.

Miller adds that metal shingles are frequently used in high-wind areas such as hurricane and tornado zones. Farmer notes that metal roofs can withstand winds of 110-120 mph, a fact that gives his clients peace of mind.

In lieu of replacing the entire roof, some homeowners install metal roofing as accent pieces over porticoes, porches, bay and eyebrow windows, cupolas and porch columns, says Alison Cook, co-owner of R. Schwartz Inc., a manufacturer of architectural sheet metal based in Cumming, Ga. "Metal lasts longer and homeowners like the aesthetics of it," says Cook.

Different product profiles are

sometimes used on the same roof, Miller notes. His company supplied roofing for the 2018 retrofit of a mansard-roofed home in Ohio (see photos), where the upper part of the roof was replaced with standing seam roofing and the mansard roof was replaced with steel shingles. "If homeowners don't have the budget for standing seam on the entire roof but they really want the look of it, they can put it on an extended wing of the house," he says.

LaPlante sees the longevity of the product as its number one advantage. "The weather is changing every year and some areas have become victims of natural catastrophes," he says. "You take California, or the [Canadian] province of Alberta, with widespread forest fires. Asphalt shingles and other roofing products do not [hold up to] this."

Even condominium associations are recognizing the advantages of metal roofing, says LaPlante. "It allows them to keep smaller re-roofing funds than they would normally have to carry with traditional asphalt shingles," he says.

COST-VALUE PROPOSITION

While metal roofing is not an inexpensive option for homeowners, that doesn't mean they should settle for lower-priced products, says Miller, because they could be sacrificing longevity and quality by choosing an entry-level or very low-end metal roof. He urges roofing contractors to look at the quality of the metal and the coatings, and find manufacturers that will stand behind their products.

Farmer, who installs metal roofing as a retrofit for existing homes throughout the state of Michigan, says his clients find the long life

span, beauty, durability, energy efficiency and value of metal roofing immensely appealing, even though it costs more than asphalt shingles.

"Once we've educated customers about the product, they choose better finishes, underlayment, sealants and metals," he says. "Our roofs also come with a lifetime labor warranty in addition to the manufacturer's warranty; therefore, they may cost three to four times as much as asphalt."

Farmer says that on average, a 23- to 25-square, metal roof retrofit costs \$44,000, compared to \$10,000 for an asphalt roof of the same size. More expensive materials like copper, obviously, drive up the price, but "one of the nice things about metal is that you do have a pretty wide range of prices," Miller says.

"If the homeowners plan to move in a couple of years, metal roofing probably won't make financial sense for them," he says. "But if they plan to live in the home for at least another 15 years, it makes every bit of sense."

Along the Atlantic coast of North Florida, metal roofs do a better job of resisting wind uplift than other roofing materials, says Cody Thorne of Thorne Metal Systems, Middleburg, Fla. "Low maintenance is also a big selling point. [Metal roofs aren't like] asphalt and tile roofs, which over the years may need patching or replacement." Customers with oceanfront homes get additional peace of mind with a warranty against roof damage from saltwater, he says.

Because metal roofing is lightweight, it can usually be installed over the existing roof, reducing the amount of time the home must be exposed to the elements. Old asphalt composition shingles are ideal for such projects,

Farmer says. Heavily profiled metal shakes and tiles can even be installed over wood shingles or shakes, although LaPlante advises consulting the manufacturer or the contractor beforehand, since there may be an existing weight problem with the structure or roof decking. In some cases, the old roofing will have to be removed from the edge perimeter of the roof and the old lumber replaced with fresh lumber.

Another big advantage of a metal roof is that it offers significant energy savings, paying back homeowners for their investment over time. Metal roofs with cool roof coatings deflect the heat instead of absorbing it, as asphalt shingles do.

"We do a fair amount of aluminum roofs, and they're extremely energy efficient," says Farmer. A study funded by the U.S. Department of Energy (DOE) and conducted at the Oak Ridge National Laboratory showed that metal roofs with heat-deflecting coatings can reduce energy costs by up to 40 percent. The DOE urges consumers and roofing contractors to use Energy Star products that can keep a roof more than 50 degrees cooler in the summer.

Ventilation is also critical to preventing mold growth and saving energy. Improperly designed ridge vents can reverse the proper flow of air in an attic, causing heat buildup and the accumulation of moisture in insulation. According to the DOE, every 1 percent of moisture removed from attic insulation improves its R-value by about 2.5 percent. Consequently, American Metal Roofs designed a ridge vent, called the Hi-Flow vent, for use with its roof systems.

Farmer says the Hi-Flow vent creates suction at the ridge "so that we're

pulling in [moist] air at the soffit. There's so much air movement through the attic that it dries out the insulation."

Removing 10 percent of the moisture makes the insulation 25 percent more effective, which is not only beneficial in the summertime. Michigan residents are obliged to heat their homes for a large part of the year and the Hi-Flow vent, coupled with a metal roof, translates into actual dollar savings on energy bills, he says.

Miller observes that California's solar mandate, which requires every newly built home to have solar panels by 2020, ties in perfectly with metal roofing. "You can install solar panels on top of a metal roof and not damage it," he says. "If an asphalt roof needs repairs, you have to remove the solar panels, fix the roof and then replace the solar." ■

METAL ROOF INSTALLERS PICK UP SPEED

Metal roofs take longer to install than asphalt roofs—typically two to three times as long. As Philippe LaPlante, sales manager for Ideal Roofing, a manufacturer based in Ottawa, Ontario, Canada, explains, consumers are not only paying more for a higher-quality material, but also a more professional installation that requires specialized skills, expertise and equipment.

Metal roof manufacturers provide 40- to 50-year warranties on their products, so it behooves homeowners to ensure they hire a roofing contractor with a solid track record with metal "and the confidence to do a great job," says LaPlante.

While it might take a roofing crew a week to install their first metal roof, once they've completed three or four projects, they can substantially reduce that time. LaPlante has seen roofers complete a 30-square metal roof, including valleys, in a day with only four installers, though much depends on the type of metal, the

roof style, the geographic location and the complexity of the existing roof.

Nowadays, roof panels have built-in clip legs that increase installation speed and reduce cost, says Cody Thorne of Thorne Metal Systems, a roofing contractor in Middleburg, Fla.

Frank Farmer, president of American Metal Roofs, a contractor in Flint, Mich., says, "If it takes one day to install a new asphalt roof, a comparable metal roof will take three. If the asphalt roof takes two days, metal will take five or six days."

American Metal Roofs was able to cut down on installation time by developing a line of speed trims. "They have reduced our installation time by 25-30 percent," says Farmer. The trims are air-nailable, do not use clips, and allow a less experienced installer to install them rapidly.

"These trims have also been designed for snow country—areas that get high snow loads," he says. Snow slides off the trim instead of tearing it away from the roof. ■