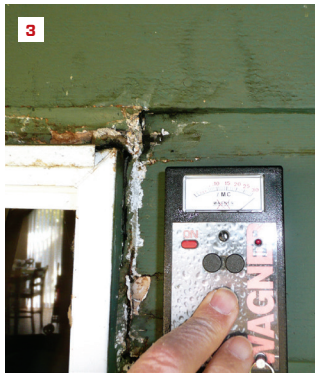
BY GEORGE A. TSONGAS



1. More than just an aesthetic problem, a mossy roof left untreated can severely damage a home inside and out.
2. The roof moss plant will live happily in the nooks and crannies of a shingled roof and can grow to be several inches thick.
3. Moss absorbs moisture and transfers it to the roof system. Water from the saturated sheathing then runs down to the top plates and into the wall system. Here the affected siding and window trim have a sky-high moisture content.

Damage From Roof Moss

A common sight in wet winter climates is bright green moss growing on the roofs of both expensive and inexpensive homes. Here in Portland, Ore., thick moss on shingled roofs is particularly common. While roof moss may seem to be just a cosmetic problem, if left in place, it can severely damage your roof and even have disastrous consequences for other parts of your home.

Moss is a plant that grows naturally on just about any surface, including the ground, trees, and sidewalks, as well as roofs. It produces tiny spores that become airborne and land on roofs and other prospective growth sites. During the moist, cooler months, these spores grow into moss. In drier weather, the moss goes dormant, turning into a rust-colored plant mass. Moss is different from algae, lichen, or mold fungi, which are typically easier to clean and less damaging to a roof.

Moss readily grows on roof shingles, especially in the spaces between shingles where the spores collect. In wet climates, moss commonly grows into a mat a few inches thick. Once established it acts like a sponge, soaking up and storing rainwater. Some of that water then wicks up under the shingles through capillary action and soaks into and through the roof underlayment (typically 15- or 30-pound felt), eventually saturating the roof sheathing below. Moss growth is usually greatest on north-facing roofs or on roof areas shaded by trees where solar drying is inhibited.

The wet roof sheathing is perfect for supporting mold growth. If the condition goes unchecked, the sheathing ultimately decays and loses its structural integrity. In severe cases—where the moisture content of the sheathing may exceed 30%—this decay spreads to the supporting roof structure, making the roof unsafe. Often this damage occurs in attics that have plenty of ventilation.

Photos: George A. Tsongas

4. Moisture from roof moss can cause damage inside a wall, ruining insulation and drywall and encouraging mold growth that can be dangerous to occupants of the home.
5. The most effective way to remove moss is with a broom. Always avoid power washing, which can cause further damage to the roof.
6. Moss-killing chemicals applied along the peak and at the midpoint of the roof plane will kill roof moss and prevent its return, but it's best to broom off the moss first.

I expect to see some structural damage in a roof with a severe moss problem, but in the house shown here, the damage to the walls below was a surprise. Water from the saturated sheathing and rafters had made its way down to the wall plates. Some of it then entered the outside of the wall cavity and soaked into the cedar lap siding. The entire wall of siding was water-stained, and it had a moisture content of over 30%; plus the paint was peeling and the window trim was decaying (photo, previous page). I didn't open the walls during my inspection, but when they were opened later for repair, the water damage to the wall sheathing and framing was extensive as well as expensive to repair.

Inside one of the north-facing bedrooms, I found severe mold growth on the ceiling and walls (photo, above), made possible by water that ran down from the roof sheathing and onto the ceiling. Similar mold damage was evident on the ceiling and the outside wall of a nearby bathroom. In that room, the ceiling drywall had already been replaced once because of the water leakage and subsequent mold growth.

It's painfully obvious that moss can shorten the life span of a shingled roof and result in costly repairs—both structural and cosmetic—that would not be necessary if the roof were maintained properly and kept clear of moss.

One way to keep a roof free of moss is by installing zinc or copper flashing along the peak. As rain washes down the roof, some of the metal dissolves and kills the moss. I've even seen copper wire strung along the peak to prevent moss growth. Another option is brushing or "brooming" off the moss if the growth is not too bad. You can also apply moss-killing chemicals in liquid, granule, or powder form that are available in home stores or online. Applying such chemicals carries the downside of possibly contaminating groundwater, but these materials are effective at killing moss. I've successfully used the powder form to prevent moss on my own roof.

If the roof is free of moss, then zinc strips or treatment with chemicals will keep it that way. But if moss has already started growing, then it's best to carefully remove it with a brush or broom. I recommend doing this on a regular basis—typically once or twice a year. I would avoid power washing the moss off because that can drive moisture under the shingles, damaging the underlying roof components.

It should also be noted that some newer shingles have moss inhibitors built in that will keep moss at bay for up to 20 years. The incremental cost of shingles that feature these inhibitors is not great. Even the cost of annual moss treatment is insignificant compared with the cost of roof and wall repairs made necessary by the growth of moss.

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