

By Special to The Oregonian

A common sight in Oregon's rainy, humid winter is the growth of bright green moss on shingle and masonry roofs. Homeowners may think moss on roofs is innocuous, just a cosmetic problem or even pretty. Yet leaving it in place can damage the roof and even have disastrous consequences. Research shows that moss needs to be dealt with and the sooner the better.

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 air-borne 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 that can be as much as a few inches thick.

Moss growth is usually greatest on north-facing roofs, roof areas shaded by trees and other places that are not exposed to enough sun to dry out.

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, which is typically 15- or 30-pound felt. Eventually, it saturates the roof sheathing below.

The wetting of the wood roof sheathing can readily cause mold growth and serious decay. Then the roof loses its structural integrity and can become unsafe.

Sometimes in more severe cases it can also cause the supporting structural roof framing members to decay. Often this moss-related damage occurs in attics that have plenty of ventilation.

Rainwater leaking through the roof from moss can also result in serious, unhealthy mold growth on interior room surfaces as well as wall component decay that is extremely expensive to repair.

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.

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.

If the roof is free of moss, zinc strips or treatment with chemicals will keep it that way.

But if moss has already started growing, it’s best to carefully remove it with chemicals and a brush or broom on a regular basis — typically once or twice a year. You can do it yourself or hire professionals. A single application of moss killing chemicals by a homeowner can cost about \$20 to \$40 depending on the roof size.

Avoid power washing the moss off because that can drive moisture under the shingles, damaging the underlying roof components.

Some newer shingles have moss inhibitors built in that may keep moss at bay for up to 20 years. The additional cost of shingles that feature these inhibitors is not great; typically a few hundred dollars. 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.

-- George A.Tsongas

Tsongas is a consulting engineer, building scientist and professor emeritus of mechanical engineering at Portland State University. He lives in Portland and wrote about moss damage for the home building contractor's trade journal "Journal of Light Construction."