

Removing Organic Growth from Prepainted Metal Roofing

Organic Growth

Organic growth on a prepainted metal roof is an aesthetic problem that may become a more serious problem if not addressed. This tool kit offers a simple approach in dealing with the problem.

Roofing—especially on north-facing roofs or shaded areas—may show signs of mildew, algae, or mold growth on the surface. This is a common problem with asphalt shingles, as shown below.



These dark areas are usually not caused by dirt, but rather algae growth called *gloeocapsa magma*, also known as blue-green algae. A similar material in the same family is cyanobacteria. The “cyano” in this bacteria refers to its blue-green color, and has nothing to do with a cyano ($-C\equiv N$) organic moiety. This type of roof algae appears black because it covers itself in a UV ray protective layer. While it often begins as spots on a roof, over many months these spots can grow into large colonies. Algae is an airborne plant, so it spreads relatively easily. It thrives in humid conditions because it needs heat, moisture, and nutrients to grow. This blue-green algae feeds off the minerals found in the components of asphalt shingles.

Unlike shingles, prepainted metal is not a food source for this organic growth; rather, airborne organic material that falls onto the roof, such as leaves and bird droppings, is the source of food for the organic growth. Moss, algae, and lichen grow on your roof through a combination of two things: moisture and organic debris. The more water and the more debris, the greater the chance of moss growth. Another critical factor is the amount of shade your roof receives. A well-shaded roof prevents the evaporation of moisture, creating excellent conditions for moss to thrive.

This Tool Kit is part of a series of educational aids developed by the members of the National Coil Coating Association. NCCA is a trade association of coil coaters and suppliers of raw materials and equipment used in the coil coating process. The association concentrates its efforts on providing educational resources and assisting its members in providing superior products and services to their customers. NCCA Tool Kits are information tools and should not be used as substitutes for instructions from individual manufacturers. Always consult with individual manufacturers for specific instructions regarding their products and equipment.

Types of Organic Growth

A number of types of growths can occur. Moss, algae, and lichens are all different types of growth that can be found on your roof. Each of them can damage your roof in various ways.



Moss growing on a roof.



Blue-green algae growing on the surface of a pond.

Lichen is a combination of algae and fungi. Lichen is not technically a plant at all, but rather a type of fungus that exists in a symbiotic relationship with algae. There are four types of lichen with varying appearances, and it is easy to mistake lichen for moss.



Lichen growing on a tree.

While a prepainted metal roof is more resistant to organic growth build-up, it can occur, especially in warm, humid environments. Some examples are shown below.



Cleaning Your Metal Roof

Regularly rinsing a metal roof with water or a diluted solution of water and dish soap (Dawn, Ajax, Palmolive) of airborne material is always recommended to minimize the prevalence of organic growth on a metal roof, but organic growth may still develop. Since these living materials can produce by-products (organic acids, and, in some cases, mineral acids) that are aggressive to prepainted metal, it is important to remove the growth when its presence is observed. Each has the possibility to degrade a paint film.

These growths are usually easy to remove. The following bleach solution and process is suggested, followed by a thorough fresh-water rinse to remove the solution. The cleaning solution is easy to prepare and use:

1. Mix:
 - a. 1/3 cup of powdered laundry detergent (such as Tide, All, Arm & Hammer, Gain, etc.)
 - b. 1 quart of bleach (5% solution)
 - c. 3 quarts of water.
2. If you are wary of using a bleach product on your metal roof, you may prefer a solution of 1 box TSP (available at paint store or home center paint department) in five gallons of water.
3. Test the solution you are using before wetting the entire roof surface. Pick a spot on the roof that is covered or less noticeable to test the cleaning solution. That way you will know if the cleanser works and will ensure it doesn't cause damage to the system.
4. Spray this solution onto the affected area or use a soft brush or rag and lightly scrub the surface until the area is free of organic growth.
5. After 5-10 minutes, thoroughly rinse the solution from the surface with fresh water.

There are a number of precautions to observe when dealing with organic growth on a prepainted metal roof. Reaching a roof may require working at height. Safety must always be an essential consideration.

1. Always wear protective goggles and gloves when handling the above solution.
2. Do not deviate from the above solution. Do not increase the amount of soap and bleach.
3. Never use abrasive materials, steel wool, sandpaper, scouring powders, or a wire brush to clean the roof.
4. Never use a high-pressure washer to clean your roof.
5. Never use paint thinners, solvents, or paint removers to clean a prepainted metal roof.
6. Ladder safety is imperative, but it is beyond the scope of this tool kit to detail the safety procedures that need to be followed. If you have any concern about using a ladder or climbing onto your roof, hire a professional to do the cleaning.
7. Always wear appropriate footwear and clothing.
8. Always wear fall protection.
9. Never climb onto your roof without having another person present.
10. The above cleaning solutions may harm plants and trees. Cover these to protect them from the cleaning solution. Be prepared to rinse them after the roof has been cleaned.
11. Consider hiring a professional to do this work.



Organic growth on a prepainted metal roof may become a more serious problem so be sure to take appropriate action to clean and care for your roof as suggested. The cleaning solution is easy to prepare and use, but reaching a roof may require working at height. Safety must always be an essential consideration.