

## WHY ROOFS BLACK STREAK

The black streaks we see on roofs are caused by an ancient bacteria named "Gloeocapsa (pronounced Glow-e-o-cap-sa) Magma." More commonly known as "Blue Green Algae," many roofers mistakenly refer to this tiny-little life form as just plain old "algae."

This one-celled, one-chromosome bacteria has abilities to; 1) Turn black to protect itself from the UV rays of the sun. 2) To produce an outer-cell sticky substance for roof adherence. And 3) To replicate at a very fast rate.

Black streaking roofs became a problem during the 1990's. The black streaking was traced to changes in the roofing shingles. After 1980 "Asphalt" shingles were converted from a paper-based to a fiberglass shingle mat and were then known as "Asphalt-Fiberglass" shingles. This change produced three solid wins. Fiberglass-mat shingles last longer, are more fire resistant, and require less oil to produce. The downside of the change is larger amounts of limestone (aka "filler") were added to the inside of the shingle to add to the shingles wind resistance.

Limestone is composed mostly of calcium carbonate--the long dead, organic remains of sea animals and sea shells. The Blue-Green Algae uses the nutrients from the limestone, along with photosynthesis (converting the sun's energy into sugars), to survive. This bacteria living on the shingles is what causes the roofs to black streak.

In an effort to solve the black streaking problem, shingle manufacturers added zinc ions to the shingles. After that attempt failed the manufacturers went with copper ions. Copper ions (small bits of copper molecules with a positive electrical charge) destroy the inside of the bacteria's cell. Currently, most shingles have about 2 to 4% ionized copper granules added to the outside face of the shingles.

Today's standard shingles are warranted "algae" resistant for 10 years. If longer bacteria-free periods are desired, the installation of premium shingles and /or the installation of copper strips installed along the roof peaks are recommended.

The good news is roofs can be cleaned. Many methods and cleaning products are available. The bad news is the cleanings are only a temporary solution and most of the cleaning styles are damaging to the environment, landscaping and/ or roof shingles.

With this information in mind, until the black streaking problem is fully resolved, all I can suggest is when having your home re-roofed you choose a dark shingle color to help conceal the black streaks when they appear.

Good luck with your home.

Sincerely,

Dennis Dunbar, Roofing Contractor, Berwyn PA

