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what
matters
most™

To: GAF Residential Sales, GAF Contractors, Field Services, AIS, CARE
From: Technical Services
No: TAB-R-107

Corrosion Of Aluminum Gutters And Flashings Caused By Copper Granules Used In Algae Resistant Shingles

What Is The Concern?

Questions have been raised recently about the potential galvanic reaction between the copper used in Algae-Resistant Shingles and aluminum gutters and flashings. This bulletin helps clarify some of the truths and myths surrounding this issue.

GAF's Experience:

Based on our research... only a few isolated incidents of galvanic reaction have been documented. In each case, the metal was determined to have been sourced from the same place and in both cases, standing water was evident. Aluminum is very susceptible to galvanic corrosion when contact with copper, assuming that the two metals are also in contact with moisture.

What's The Science?

When dissimilar metals are in contact with each other and in the presence of moisture, such as rainwater, a **galvanic reaction** occurs. This reaction results in the corrosion of the metal with the lower galvanic rating (in this case, the aluminum). Since copper has one of the highest galvanic ratings or "**nobility**", it will not be harmed by interaction with the majority of other metals. However, it will bring about corrosion of the other metals (aluminum) if in direct contact.

Can You Expect To Have A Galvanic Reaction Between The Copper Algae Resistant Shingle Granules And The Aluminum Gutters Or Flashings?

Copper will cause deterioration of aluminum. The rate of this deterioration is a factor of the amount of time the two metals are in contact. In areas where algae resistant shingles are utilized for their benefits, many homeowners elect to use non-metallic gutters such as PVC.

Copper granules have been used by the roofing industry for some time to provide algae resistance and anecdotal experience indicates that corrosion of aluminum gutters can be magnified when the gutters do not drain properly (e.g., are level and do not slope to the downspouts) allowing the accumulation of granules in the gutter. It would be difficult to speculate on whether any problems will occur. However, experience would indicate that if algae resistant shingles are combined with aluminum gutters, you can help to minimize potential problems. This can be achieved by ensuring that the gutters are free flowing, provide adequate slope to drain, and do not allow the accumulation of granules.

What Precautions Need To Be Taken?

As stated, the best preventative measure is **adequate drainage of water**. If water is left standing and granules build-up, the potential for deterioration increases.

*What GAF Shingles
Currently Have
StainGuard®
Protection?*

GAF Designer Lifetime Shingles have StainGuard® protection nationwide. Additionally, Timberline® Natural Shadow™, Timberline® HD™, Timberline® HDZ™, and Timberline® Ultra HD™ have StainGuard® protection. Finally, Royal Sovereign® is also available with StainGuard® protection in select areas.

StainGuard® algae protection is available only on shingles sold in packages bearing the StainGuard® logo.

- Products with StainGuard® algae protection are covered by a 10-year limited warranty against blue-green algae discoloration.
- StainGuard Plus™ algae protection is available only on Timberline Ultra HD® Shingles sold in packages bearing the StainGuard Plus™ logo. Products with StainGuard Plus™ algae protection are covered by a 25-year limited warranty against blue-green algae discoloration.
- See GAF Shingle & Accessory Ltd. Warranty for complete coverage and restrictions.

Questions?

GAF Technical Services Can Assist You... with these and other questions you may have regarding your new roof installation. Technical Support Services can be contacted at 800-766-3411. The GAF website is a great resource for just about any question you may have or for additional information you may require. Please visit www.gaf.com to find the latest information on our products and their installation.

Important: This document supersedes any prior GAF Technical Advisory Bulletins on this topic. Please always check www.gaf.com to make sure you have the most up to date information.