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RoofGuard™ Technical Info

RoofGuard™ is protected under US Patent Number 8,058,342 to prevent roof damage against wind uplift and granular loss to existing asphalt shingles.

In order to completely understand the effect of RoofGuard™ on asphalt-based roofing materials, the mechanism of asphalt degradation must first be understood. Asphalt is a complex mixture of hundreds of aliphatic and aromatic hydrocarbons. As asphalt weathers, it breaks down chemically. The individual molecules absorb UV radiation from the sunlight. This energy causes the molecules to vibrate and ultimately to fracture.

RoofGuard™ coated shingles show less degradation than un-coated weathered shingles and has formed a monolithic single layer membrane which is formed in-situ on the shingle. Some small fissures in the asphalt present at the time of RoofGuard™ application are actually filled, thus limiting further degradation of the shingles. These fissures would allow water to penetrate through the asphalt into the organic mat causing the shingles to swell and subsequently shrink when dry. Additional stress would develop when the shingle would freeze and thaw. Ultimately, the shingle would fail and the roof would leak, requiring replacement.

RoofGuard™ increases the longevity by two separate mechanisms. First, asphalt is subject to degradation by UV radiation. RoofGuard™ is transparent to UV radiation and it does not absorb this intense radiation. It is not subject to polymeric degradation seen in less durable chemistries like aromatic urethanes and butyls. RoofGuard™ is formulated with UV blockers to protect the asphalt from degradation.

A second mechanism of RoofGuard™ provides a water-resistant barrier over existing asphalt shingles. RoofGuard™ prevents contact of bulk water with the asphalt membrane, thus preventing low molecular weight asphalt fractions from leaching out of the asphalt. RoofGuard™ prevents intimate contact of water with the membrane and, more importantly, the reinforcing mat, thus eliminating the formation of ice and freeze/thaw changes in the membrane. Water infusion into the organic felt would also cause degradation of the mat via biological attack.

RoofGuard™ acts more like a fully adhered functional membrane than merely a paint type coating. Studies conducted have demonstrated that greater than 75% of initial elongation properties were retained even after five years exposure.

Laboratory testing performed to Florida Building Code TAS-100-95 standards has proven that a wind uplift reduction in excess of two hundred and fifteen percent (215%) is obtainable with a coverage rate of one hundred square feet per gallon (100 SF/Gal) with no water infiltration under the decking. Actual uplift reductions will vary depending on application methods, rates, and physical condition of the shingle surface being treated. Wind uplift is not covered under Enviroseal warranty, only algae growth and retention of granular. No additional warranties are expressed or implied.

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