



500 Farmers Market Rd., # 18
Fort Pierce, FL, 34982-USA
+1-772-323-5400 - 800-775-9474

Email: info@enviroseal.com Web: <http://www.enviroseal.com>



DuraRoof is registered with the United States Patent and Trademark Office and is protected under U.S. Patent No. 8,058,342. DuraRoof is the only patented process of sealing and application method for protection of asphalt roof shingles

DuraRoof eliminates algae growth, increases granular adhesion, provides UV protection, and significantly increases wind resistance of asphalt shingle roofs. DuraRoof provides a simpler, immediate, economical, and more versatile method to enhance wind resistance of existing structures and strengthen new roof construction.

Roofing systems on homes and buildings located in tropical/semi-tropical and hurricane-prone areas face many challenging conditions that can adversely affect the integrity and lifetime of the roof. Some of the most commonly used types of roofing systems include asphalt shingles which are especially susceptible to damage due to high winds, especially winds in excess of 100 mph that often occur during hurricanes or tropical storms. DuraRoof has successfully passed Florida Building Code TAS-100-95 wind tunnel testing up to 130 mph and proven to decrease wind uplift over 216%.

DuraRoof is a water-based polymeric film forming product combined with an in-situ method of applying it to asphalt shingles to seal and prevent degradation and destruction due to UV exposure, algae growth, excessive wind, rain and naturally occurring disasters such as hurricanes and hail. DuraRoof is a blend of acrylic polymers that is modified to promote adsorption into and wicking under asphalt shingles and along open edges to prevent water infiltration and curling. The method of applying DuraRoof promotes uniform distribution on the surface as well as enhances bonding between individual shingles. DuraRoof acts more like a fully adhered functional membrane than merely a paint type coating. Heavier paints and elastomeric coatings have a higher viscosity and are unable to adsorb into the asphalt or wick upwards into the shingle structure. DuraRoof is a low viscosity film forming acrylic copolymer that seals pores, cracks, and other discontinuities from moisture infiltration without affecting its ability to breathe allowing vapors to evaporate.

Typically, asphalt shingles are composed of a base material, an asphalt mixture, and a surfacing material. The base material provides support for the weather-resistant components and gives strength to the shingle. The asphalt mixture includes asphalt, limestone and other mineral stabilizers and is a complex mixture of aliphatic and aromatic compounds. The surfacing material is generally mineral granules which provide protection from impact, UV degradation, and improve fire resistance. As asphalt ages from UV exposure combined with expansion and contraction from daily temperature changes, it breaks down and degrades chemically and physically. As the weathering process continues, granule loss accelerates which exposes unprotected asphalt increasing the rate of degradation. The result of all these challenges is that the shingles are weakened structurally and highly susceptible to further damage and/or failure.

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Steeper roofs may require two applications to minimize runoff losses. As an example, roofs having a pitch of 6 inches in 12 inches or greater will typically require two applications. In general, it is preferred that the first coat is the thickest to maximize the amount of DuraRoof that penetrates the shingle. The first coating provides most of the adhesion between the granules and the asphalt/substrate matrix while the second coat is a monolithic membrane that provides additional protection. Conversely, roofs having a pitch of 5 inches in 12 inches or less can often be adequately sealed in a single application. DuraRoof is very effective on low aspect roofs, which are typically considered roofs having pitches of 1 to 3 inches per 12 inches.

Sealing with DuraRoof increases the longevity of asphalt shingles by two separate mechanisms; first by reducing the effects of asphalt degradation by UV radiation and second, by providing a water-resistant barrier. The water-resistant barrier provided by DuraRoof eliminates contact of bulk water with the asphalt membrane thereby preventing low molecular weight asphalt fractions from leaching out of the asphalt. Additionally, it prevents contact of water with the organic substrate layer eliminating the formation of ice and freeze thaw changes in the asphalt membranes. Water infusion into the organic substrate also causes degradation via biological attack.

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