

Ask the Expert: George Daisey, Group Leader, Applications Development Elastomeric Roof Coatings

Source: [DOW Construction Chemicals](#)

Are coatings cool for asphalt shingles?

Q: Reflective roof coatings are being applied to commercial buildings to improve energy efficiency and extend roof life. Can reflective coatings also be used on residential asphalt shingles?

A: Reflective roof coatings may be applied to asphalt shingles, but there are several things to consider before choosing this option.

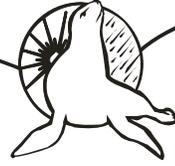


- Roof condition. Coatings can significantly extend the service life of a roof, but they won't repair a damaged or worn out roof. For best results, roofs should be in good condition; shingles should be lying flat and any localized repairs should be made before the coating is applied. The roof should be thoroughly inspected to ensure there are no existing leaks or other issues that can lead to rapid degradation.
- Ability to adhere to asphalt. With reflective coatings, almost any type of roof can become a cool roof, but you must choose a coating formulation that's compatible with your substrate. For example, a coating that works on ceramic tiles or metal roofing may not adhere to asphalt shingles, and vice versa. Choose a coating made for asphalt and/or confirm compatibility with your coating manufacturer.
- Surface Prep. Coatings must be applied to clean surfaces only, as dust, pollen, and other small particles on the roof surface can interfere with adhesion. Debris and dirt should be swept or brushed off, as the shingles may loosen if power washed.
- Application. Due to the shingles' wavy surface, it may be easier to get an even coat with a spray-applied coating than a roll-applied one. To achieve maximum protection, there should be no gaps in coverage or pinholes that can collect water. Further, when a coating is applied, the dynamics of the roof have changed. Shingles are meant to have flaps that overlap and shed water. When the shingles are encapsulated by a roof coating, the roof is essentially sealed and it becomes monolithic. So, it's important to apply an ample amount of roof coating to completely cover all spots. There should be no 'thin spots,' as the shingle tabs could pull up and damage the coating and/or provide an entry point for water.

The benefits of cool roof technology are certainly compelling. Cool roof coatings reflect the sun's rays, reducing heat transfer. Reflective roof coatings can also be used to extend a roof's service life. The most common applications are on flat commercial roofs; however, a study published by the American Society for Testing and Materials demonstrates that it is possible to apply elastomeric roof coating technology to asphalt shingle roofs.. But it's important to carefully consider the above tips before proceeding.

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When properly formulated and applied, roof coatings based on -acrylic polymers from Dow Construction Chemicals offer excellent adhesion to a variety of roofing substrates, including aged asphalt, modified bitumen, metal, concrete and others. For more information about Dow polymers for elastomeric roof coatings, visit: <http://www.dowconstructionchemicals.com/na/en/markets/erc/>

Disclaimer: The comments above are suggestions and in no way replace the onsite opinions of trained building scientists. A proper inspection of the total roof assembly is recommended to ensure the insulation, venting, soffits and overall roof assembly design is compatible with installing a roof coating over shingles.

Sources:

¹. EnergyStar

http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=RO

². Antrim, R., Johnson, C., Kirn, W., Platek, W., and Sabo, K., "The Effects of Acrylic Maintenance Coatings on Reducing Weathering Deterioration of Asphaltic Roofing Materials," Roofing Research and Standards Development: 3rd Volume. ASTM STP 1224, Thomas J. Wallace and Walter J. Rossiter, Jr., Eds., American Society for Testing and Materials, Philadelphia, 1994.

³. Dow Construction Chemicals website: <http://www.dowconstructionchemicals.com/>

