

Water Soluble Residue Found on Asphalt Roofing Products (“Tobacco Juicing”)

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The formation of a “tobacco juice” residue, so named for its color, has been widely attributed to the weathering of asphalt roofing (i.e., roof coatings, base and cap sheets and shingles – to name a few) or the exudation of asphalt fractions from the roofing material.

In fact, similar brown residues have been found on other, non-asphaltic materials, indicating that the phenomenon can be environmental in nature and not wholly attributable to asphalt roofing. An investigation of this phenomenon concluded that environmental contamination or pollutant deposition was the major contributor to tobacco juicing.

Factors commonly present with “tobacco juicing” are excessive air pollution accompanied by nighttime dew conditions and prolonged lack of rain. Air pollutants can collect on roof surfaces with the formation of dew and subsequently run down onto lower roof surfaces, fascia, and other finish surfaces. For steep slope applications, such as asphalt shingled roofs, tobacco juicing may drip off the shingles and stain the adjacent components (see photos 1-3 below for examples). This accumulation of residue can continue until the surfaces are washed or significant rainfall occurs. The residue typically will not affect the performance of the roof and should not be considered a performance problem.

For low slope applications, if any accumulation of this liquid residue occurs prior to coating, the proper bonding of coatings to the roof surface may be adversely affected. Preparation of the roof for coating should conform to the recommendations of the Roof Coatings Manufacturers Association (RCMA) and the Asphalt Roofing Manufacturers Association (ARMA) to help ensure proper adhesion. Coated smooth-surfaced roofing systems which are continuously subjected to tobacco juicing should be hosed off regularly, as tobacco juicing residue may cause the peeling of acrylic and aluminum coatings.

Though it may not be possible to control environmental elements that cause the formation of the residue, the following recommendations can be utilized by the specifier, contractor or owner to minimize the aesthetic conditions associated with tobacco juicing.

- Require edge metal with a drip lip on parapet walls where the metal slopes outward, is rounded, and has no existing lip on the outside edge to assure the residue-laden runoff will fall away from the building.

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- Hose down the roof at regular intervals during long, dry periods of the first summer after installation. Note: this is not recommended where proper fall protection is not in place, or where steps have not been taken to protect exterior surfaces that may come into contact with the wash-off, e.g., siding on a house without gutters.
- For low slope applications, the use of an aluminum coating or acrylic coating can minimize the aesthetic conditions. Coat all asphalt emulsions after they are thoroughly dried. Coat plastic cements and other solvent-based vehicle asphaltic products after they have cured for at least 30 days.
- Consult the specific material manufacturer for additional recommendations.

The effects associated with tobacco juicing can be minimized if the necessary steps are taken by the specifier, contractor and owner.

Photo 1:



Staining on trim (Courtesy of Owens Corning)

Photo 2:



Staining on landscaping (discoloration of aggregate) – Courtesy of Polyglass/S. Wadding

Photo 3:



Staining on low-slope roof surface from the upper level.

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