

SERVICE WORKS

"UP ON TOP" NEWS

Selecting The Correct Roof Coating - Part 2

Last month we discussed the basic information about roof coatings—such as coating technologies and the importance of establishing a coating's intended purpose and function to help you select proper coatings for roof systems. After you establish what function you want a coating to serve, you must consider the type of roof system being coated. The following information provides some insight regarding coating requirements for specific roof systems.

The roofing industry's workhorse is the built-up roof (BUR) system. Coatings commonly used on BUR systems include solvent and water-borne asphalt coatings; solvent and water-borne aluminumized asphalt coatings; and water-borne white elastomeric coatings (generally acrylics).

BUR systems can have several surface

finishes. They can have bare or glaze-coated top sheets; be flood-coated with mopping asphalt; have a mineral (granulated) cap sheet as a top layer; or have a finish layer of gravel embedded in hot asphalt.

A mineral cap sheet generally is the easiest surface to coat because its small texture allows most coatings to achieve a strong mechanical grip. These minerals also block asphalt bleed. Smooth BUR systems are readily coated with solvent-borne asphalt coatings. They require careful preparation and base coats to accept water-borne coatings. Gravel-covered roofs generally are impractical to coat without removing the gravel, which will affect a roof system's fire rating.

Asphalt coatings, long recognized as effective for prolonging life cycles and restoring aging BUR systems, are applied after a BUR system's initial installation and at regular intervals during the BUR system's life cycle as part of a regular maintenance program.

Aluminum pigments can be used to formulate solvent and water-borne asphalt coatings to protect against ultraviolet (UV) radiation and provide significant reflectivity. These coatings have small flakes of aluminum pigment dispersed in them. They typically have solar reflectivity values between 0.40 and 0.50 though premium formulations have demonstrated initial solar reflectivities in excess of 70 percent.

Highly reflective white top coats have become more common during the past several years as a means to reduce

peak roof surface temperatures. This minimizes peak electrical demand for air conditioning in many buildings and provides ultimate reduction in diurnal temperature cycles, which can stress and fatigue roof systems.

A majority of these white coatings are water-borne acrylic coatings. Most white acrylic coatings intended for use on asphalt roof systems can be applied directly to mineral cap sheets after appropriate surface cleaning (Some don't require a barrier layer.) Smooth asphalt surfaces normally require a specified primer or base coat designed specifically to stop asphalt from bleeding into the top coat.

Steel, aluminum and galvanized metal roof systems are good candidates for coatings. Urethane coatings and more recently, Polyurea coatings, are two-component coatings that are well-suited to metal roofing. They provide good elongation and high tensile strength—about 1,500 pounds per square inch (psi) compared with 200 psi to 400 psi for other coatings. Polyurea also results in a harder surface than other types of coatings. Rain will wash dirt off the hard surface relatively easily, making it easy to keep clean.

There is no doubt coatings prolong roof systems' life cycles. It may even be possible to extend certain roof systems' life cycles indefinitely by protecting substrates that age slowly and have long lives without the benefit of protective and reflective coatings. We currently are in the era of optimizing coatings for maximum life—in the meantime, stay tuned.



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