

CASE

Asphalt roofing is one of the most popular materials used in the United States. In fact, asphalt, a naturally occurring material that can be seen seeping from the ground in many places around the world, has been used by Mankind for roofing for thousands of years.

Often reinforced with natural fiber from cellulose sources or glass fiber for additional robustness, it typically has an exterior dusting of sand-like minerals and comes in shingles or rolls as typically seen in large commercial roofs.

Today, more than 12.5 billion square feet of asphalt shingle products are manufactured annually – enough to cover more than five million homes every year. Four out of five homes are roofed with asphalt shingles. This case study concerns movie theatre chain building in Arizona where high UV is tough on roofing with high temperatures inevitably causing asphalt-based materials to slowly off-gas from their bitumen content and become brittle over time. This roof was over 15 years old.

Problem

The roofing material was failing rapidly. It could be stripped off entirely and re-roofed again with asphalt but the large area involved would make that very expensive and time consuming. What was needed was a high-performance, cost effective coating that could be applied as a permanent overcoat and provide an absolute bond with the old asphalt. Furthermore, it would need to be highly durable against wide temperature fluctuations and have very high UV resistance.

Solution

Ecodur 201 has proven its extreme durability for over 20 years and particularly where asphalt is concerned. A two-decade old test strip across a public highway has not only demonstrated its long term impact and weathering resistance but, most importantly, the exceptional integrity of its bonding to asphalt. Ecodur is made from renewable castor oil and naturally occurring mineral gypsum and becomes an inert, non-toxic, VOC-free coating that retains its flexibility and 'repairability' for the lifetime of the coating.

An additional consideration for it being chosen for this project was that it does not contain solvents, require them for the application, or need them for the clean-up. Solvent disposal is a very costly and highly regulated process in the US.

Application Results



After standard preparation to ensure that the original asphalt roofing material and overcoat was dry, clean, free of loose material and cracks, Ecodur 201M was manually applied to a depth of between 30 and 50 mils. Particular attention was paid to original seams. Ecodur creeps into any crack or gap, making an extreme bond seal and providing a 100% weather seal. The Ecodur was then over coated with 50 mils of a standard reflective and flexible acrylic roof coating paint. The Ecodur acts as a great sealer on its own and also as a super adhesive primer when used with other reflective top coat paints.

With no VOCs emanating from the Ecodur, the applicators were able to work swiftly unencumbered by uncomfortable additional safety gear that can be required for some conventional epoxy coatings that still contain VOCs. The pot life of 30-40 minutes allowed the applicators a wide time margin to get the contents of the Ecodur containers applied. Full cure was achieved in the standard period of 24 hours in the weather that remained dry with temperatures well within the normal application range. Final inspection at this point was satisfactory and the project was declared complete with no anomalies detected. The roof now has an extended 15-year life as a minimum.

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