CASE

Every year, more than one million Americans are diagnosed with skin cancer, making it the most common form of cancer in the country. In the United States, one person dies of skin cancer every hour of melanoma every year. Not surprisingly UV also ravages unprotected inanimate surfaces, whether they be exposed lumber, car paint, fabrics, plastics or roofs. This case study focusses on cementitious roofing in the heart of the US high UV radiation belt.

Problem

Cementitious roofs normally have exceptional longevity even under severe UV exposure. But, in the high UV radiation belt, they produce an oxide layer that makes it extremely hard to overcoat satisfactorily when the inevitable time comes for repair or upgrading the overall appearance.

The subject of this case study is a high school with an 18,000 square foot 16-year-old cementitious roof over 5-inch foam that was failing with extensive micro-cracking from UV attack and had required various patch repairs. In common with cementitious roofs, it has produced the tough layer of oxidation that made recoating with conventional coatings a poor prospect for a long term performance outcome.

Solution

Castagra's Ecodur has the ability to stick to exceptionally slick surfaces such as Teflon coated ones, and, in the case some others, it can actually bond or partially bond chemically because of Ecodur's unique chemistry. Cementitious surfaces had earlier been demonstrated as a particularly good candidate for Ecodur where no other coating had performed with long term protection or long term adhesion.

Application Results

The school's gymnasium roof was surface prepped carefully with a power broom as it is only about a quarter of an inch thick. The work included removing old patches. It was then sprayed at very high pressure up to *8,000 psi with a 30 mls top coat of Ecodur and two applications on top of the Ecodur with a high reflectivity white acrylic to a total depth of 50 mls. Pot life of the Ecodur was 30-40 minutes in an average ambient temperature of about 75 degrees Fahrenheit with dry conditions.

Being VOC-free, BPA-free and non-toxic, Ecodur met the client's desire for a

'green' coating that would not only provide the performance and longevity required, but would also be as environmentally benign as possible. Ecodur is made from recyclable gypsum, a naturally occurring mineral and renewable castor oil.

Importantly a pull stress test of a piece of fabric laid onto the cementation roof and covered in Ecodur demonstrated the product's exceptional adhesion. The fabric could not be pulled off and finally had to be ground off.

An initial walk-over inspection of the Ecodur coating was performed after about four hours and a final inspection was conducted after 24 hours with no anomalies discovered and the project was signed off as having been completed satisfactorily

Footnote re *. This was not Castagra spray equipment and the high pressure was used to demonstrate that two-part Ecodur could be sprayed from conventional equipment and hoses approved for such high pressures by an appropriately experienced and trained crew strictly following state and federal safety protocols.

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