

# CASE

Commercial flat roofing needs a lot of protection from climate extremes. A baking sun not only delivers severely high temperatures, it also cascades down ultra violet light that is also very damaging over time. Where cost was a sharply limiting factor decades ago, tar was a simple solution but, as the benzenes and other aromatics were driven off, it would crack and ultimately fail, usually within a decade.

Today, a new force factor is in play: reducing the heat sink effect of large urban areas caused not only by roads and sidewalks, but also dark colored roofs.

## Problem

This San Diego commercial building client with a 10,000 square foot roof, not only wanted a durable roof covered with a zero VOC coating, but also one that would significantly help reduce a heat sink effect associated with older type coatings such as asphalt.

Aside from these considerations, the client also wanted durability and a type of coating that would require little or no maintenance for greatly extended periods. Molten asphalt topped with gravel typically only lasts about 10 years. Rolls of rubber in a hot application not only emit toxic fumes, they are also expensive.

Whilst cold-applied EPDM only emits low VOCs, they are expensive. Rubber roofs are the most used flat roofing products in the US / Canadian commercial roofing market. The average flat roof cost for EPDM is \$7,766, with PVC at \$9,095 and TPO at \$8,415.

Finally, the client wanted value for money, a combination of low price and high performance.

## Solution

Ecodur is made from natural materials. It is essentially plasticised gypsum made from renewable castor oil and soft rock gypsum which is widely mined in the US. Ecodur is zero VOCs, completely non-toxic, has double the adhesion of most conventional epoxy coatings, and is highly cost-effective. It has been used to coat hundreds of frac tanks and is an ideal ship deck coating. 20-year plus brine immersion tests have produced no measurable signs of deterioration.

Ecodur is highly resistant to UV, waterproof, and, very importantly, retains its flexibility and repairability for the entire lifetime of the coating. This ability to re-bond to original Ecodur coatings makes repairs simple and allow for the integrity of the roof to be maintained 100%.



In this case, Ecodur also allowed for a lighter, more reflective top coat to be applied, thus greatly reducing the heat sink effect.

## Application Results

Prepping only required that the application surface be clean, dry, and free of any loose material. The applicators wore conventional protective gear to protect all uncovered areas, including full industrial standard eye protection. With the very wide application temperature profile of Ecodur, the ambient temperature was well within limits.

The roof received a manual application to an average depth of 40-50 mils. The catalyst dosage allowed for up to 30 minutes of work time per kit which is more than adequate for this job. Thereafter, the applied surfaces set up rapidly and become non-tacky with a full cure achieved in 24 hours. An average application depth was 40-50 mils with self-levelling Ecodur. Post application inspections revealed no anomalies.

Ecodur is made from natural materials