



High-Performance Roof Coating Provides Long-Lasting Protection in Extreme Weather Conditions

Spaceport's innovative roof system relies on Kynar Aquatec®-based topcoats to achieve long service life, color stability, and unique creative finish.

A visionary project of the New Mexico Space Authority and home to Virgin Galactic's space-flight program, Spaceport America is the world's first commercial spaceport. Its smooth, spaceship-like design blends the feeling and mystery of space flight with the color and character of the surrounding desert landscape.

Even more impressive than the sinuous-shaped building's iconic design is the fact that the architects hope to earn a LEED Gold® rating. Notable features of the sustainable and environmentally conscious structure include 60-foot roof height, a viewing gallery with large windows facing the runway, arcing hanger doors that span 160-foot wide openings, passive heating/cooling and natural lighting, and a rolling roof whose shape resembles a manta ray.

Innovative Roofing System

The uniquely shaped roof of the 110,000 square foot terminal hanger facility consists of 12 primary undulating steel trusses spanning over 180 feet with a 45-foot cantilever at the eastern edge, a blackened stainless steel bull nose edge around the perimeter, a U-shaped clerestory in the center, and 42 skylights on top.

The roof assembly installed by Progressive Roofing LLC includes 90,000 square feet of 60-mil EPDM membrane that was fully adhered to ½-inch cover foam board, three layers of 2-inch ISO to achieve a thermal insulation value of R-38, and numerous layers of protective coatings. Underneath the metal deck is a medium density sprayed cementitious fire proofing that provides additional insulating qualities, as well as an air space, underlayment gypsum sheathing



Project:
Spaceport America
Las Cruces, NM

Coating:
Kymax®

Coating Supplier:
Quest Construction Products,
Home of United Coatings
Phoenix, Arizona

Continued on back



board, and a vapor barrier to complete the fire-rated assembly.

Extreme Weathering

When it came to choosing a topcoat finish, durability and sustainability of the color were two very important performance considerations. "In this part of the country, there is concern about heat gain and degradation of roofing materials over time due to the extreme weather conditions," said Steve Elsley, project manager for Progressive Roofing. "Based on our experience, we selected United Coatings' Kymax® product, which holds up very well under demanding weather conditions and also comes with a 10-year warranty against cracking, delamination, and discoloration."

Kymax® is a thin-build elastomeric coating that provides long-term color stability, resistance to dirt build-up, and protection against severe weather conditions. The coating is based on

Kynar Aquatec® PVDF latex, an emulsion-based technology developed by Arkema Inc. that provides similar durability and performance as Kynar 500® PVDF resin-based coatings. However, unlike factory-applied Kynar 500® resin-based coatings, coatings based on Kynar Aquatec® latex cure at ambient temperatures, meaning they can be field applied to a variety of substrates and as a finish coat over acrylic basecoats. Another benefit is the potential energy savings based on the coating's resistance to biological growth and other external factors that reduce the reflectivity of traditional roofing materials.

Stealth Finish

In addition to providing color stability and long-term protection of the roofing system, the design plan called for an artistic application of three topcoat layers to achieve a mottled earth-toned finish that would mimic the coloration of the surrounding landscape. After experimenting

with different application approaches on various EPDM samples, Progressive Roofing applied 600 gallons of the Kymax® coating using a spray technique to achieve the desired mottled and four-colored appearance specified by the architects. "The result is a magnificent looking facility built in harmony with the surroundings of the area," said David Hazzard, principal architect in charge of the project at New Mexico's SMPC Architects.

"The Kymax® coating mixed and sprayed very well," Elsley added. "We have used EPDM roofing systems for over 30 years and have sprayed millions of square feet of coatings. We use Kymax® coating all over the place, and we will definitely use it again, especially in projects requiring custom color and where customers want a high quality coating that will keep that color for 10, 15, 20 years or more."

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