

Watertight Design Provides Protection for Military Aircrafts

Peterson Air Force Base | Colorado Springs, CO

MILITARY

CHALLENGE

Hangar 210 at Peterson Air Force Base in Colorado Springs, Colorado, had begun leaking, posing significant danger to the aircraft housed inside. The hangar is used primarily for the maintenance and repair of aircraft, during which control panels and gears are often exposed and can be significantly damaged by leaking water. The seams on the hangar's original through-fastened metal standing seam roof had begun separating, causing severe leaking. In addition to the failing standing seam roof, the built-up roof (BUR) over the flat section of the hangar had begun deteriorating and was also in critical need of replacement. Phil Algien, 21st CES SABER project manager at the base, knew it was vital the roof be replaced before any aircraft were heavily damaged. He contacted local Garland representative, Jeff Ruden, who had previously completed several other roofing projects at the base.

SOLUTION

After completing a survey of the roof, Ruden recommended the failing system be replaced with Garland's R-Mer® Span 22-gauge 16-inch standing seam metal roof system. To achieve the watertight integrity needed to protect the aircraft, the 78-foot Galvan-coated steel standing seam panels were roll formed on site to create a continuous panel. Ruden explains, "Our ability to provide continuous panels with no laps provides the military base with a watertight system and the comfort of knowing their aircraft are being protected from the elements."

The existing roof system was removed down to the deck and an SBS-modified base sheet was installed over the top of polyisocyanurate insulation with an R-value of 20. With the hangar's 7:12 slope, the standing seam system provides the durability and watertight integrity needed for a long-term high-performance solution. As another measure of protection, an ultra-heavy duty fixed panel detail was utilized via a through-bolt assembly to secure the panels during thermal fluctuations. In addition, the 22-gauge 16-inch panels have a unique profile that contains mesas throughout to minimize "oil canning."

The hangar's flat roof was replaced with a multi-ply hot-applied modified built-up system comprised of HPR® Tri-Base Premium base sheet, HPR® Glasfelt fiberglass felt, and StressPly® Plus FR Mineral modified bitumen membrane. Ruden explains, "It's rewarding that Garland is able to provide Peterson with the value of working with a full-service manufacturer, providing them with both the metal and modified portions of the high-performance roofing system."

Algien concludes, "I'm impressed with the watertight system Garland was able to achieve through the use of continuous metal panels, providing us with guaranteed protection for our military aircraft. I'm looking forward to working with Jeff in the future on metal projects at the base."

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Phil Algien
Project Manager
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Location: Colorado Springs, CO
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Materials: HPR® Tri-Base Premium
HPR® Glasfelt
StressPly® Plus FR Mineral
R-Mer® Span