

A Special Building Envelope For The Special Forces



Today, with KingZip™ insulated roof panels and Kingspan 300 Azteco insulated metal wall panels, U.S. Special Forces has an impressive mission capable facility at Cannon Air Force Base.

U.S. Army Special Operations Forces commissioned the Corp of Engineers to design and construct a new hangar and aircraft maintenance facility at Cannon Air Force Base, in Curry County, New Mexico. The total scope of this project included the construction of a high bay aircraft maintenance hangar, with an associated aircraft maintenance unit, complete with water storage tanks, a pump house, and an aircraft parts storage warehouse. Construction work had to be completed quickly and without interference to an existing, and active airfield.

The Kingspan KingZip™ Standing Seam Insulated Metal Roofing Panels and 300 Azteco Insulated Metal Panels (IMPs) were specified by the project architect, the U.S. Army Corp of Engineers, to match other hangars adjacent to the project on the recommendation of Consolidated Metal Builders. CMB was the building envelope subcontractor on this project for the general contractor, Hensel Phelps Construction of Phoenix, Arizona. Ric Justus, CEO of Consolidated Metal Builders, said that his company had become familiar with Kingspan products during previous design-build hangar projects at Cannon AFB. To construct the roof and walls, the project utilized 120,000 square feet of Kingspan panels.

Roof Requirements Readied

According to Ric Justus, there were specific reasons why KingZip metal roofing panels were selected for the roof conversion project of the hangar. "The KingZip panels were chosen as a value engineering option after the job was awarded," he said. "They substituted for an underlayment, rigid board insulation stack, and single skin standing seam roof." Justus also noted another prime reason for recommending KingZip. "It allowed us to perform a quicker and safer installation of the roof system on this airfield project in cold, windy winter conditions."

On the hangar, which peaks at 80' tall and over 300' in width, the simple saver insulation system would have to be installed from the underside with many 80' boom lifts. The single skin standing seam would have to be coordinated to be installed at the same time as insulation. That would be very slow process and risky in the weather conditions at the time. "Kingzip gave us the best substitute because it is a sandwiched 'all in one' system to install the roof from above with minor equipment below for the joints," said Justus. The insulation value of the panel was equivalent or better with the 4" standing seam system. Costs of the materials were higher, however the installation costs were much lower, especially if you take into consideration the reduced chance of weather delays, inside equipment coordination with other work, and daily getting started and stopping each day."

Approximately 28,000 square feet of KingZip red panels were installed for the lower roof and 42,000 square feet of KingZip white panels were installed for the upper roof. Ric Justus described the unique design features that challenged Consolidated Metal Builders on this project. "We had two roof colors and one was visible that needed to match a neighboring identical building being built at the same time," he recalled. "We used a single skin of the KingZip product for a fascia panel which hadn't been done previously."

Not all standing seam metal roofs panels are alike and the KingZip metal roofing panel stands out amongst the crowd. It is manufactured with energy-efficiency, durability, and low maintenance in mind. With a KingZip metal roofing system, the building owner, in this case the U.S. Army Special Operations Forces, can enjoy energy and cost cutting savings of as much as 30% over standard cavity-based insulation systems. The savings come

with a high R-value, thermal performance of superior airtightness, and low thermal bridging. This eco-friendly metal roof panel contains a substantial amount of recycled content on the exterior skins and the panels themselves are recyclable. These panels are also eco-friendly because they lower a building's operational energy demands (primarily heating and cooling), and as a result, reduce the carbon footprint of the Special Forces Hangar at Cannon Air Force Base.

Another benefit of KingZip metal roofing panels is that they are rigorously tested to ensure they remain both air and weathertight over the service life of the building. This added effectiveness helps fight air leakage, which is one of the biggest sources of building heat loss (or heat gain). KingZip roofing panels provide an exterior weather barrier, high efficiency insulation core, and an integral vapor barrier. In addition to the construction and energy savings, designers will appreciate the array of color and finishing options provided by KingZip. "Simply stated, it's a superior commercial metal roofing system," said Ric Justus.

Walls And All

The old saying, "time is money," is so true when it comes to the performance benefits of an insulated metal roof and wall. Kingspan's one-step installation can reduce on-site installation time by up to 50% compared to traditional multi-part insulated metal panels systems. This reduces multiple labor steps required with other roof and wall systems down to a single operation.



Approximately 50,000 square feet of Kingspan 300 Azteco insulated metal panels were specified for the wall of the Cannon AFB hangar. This type of IMP can be used in a multitude of building designs. When utilizing this single component insulated metal panel product, compared to the more complicated built up wall system, construction delays are minimized. Much like the KingZip roof panels, the Kingspan 300 Azteco insulated metal panels provide high R-value thermal performance, excellent airtightness, and low thermal bridging. The 300 Series panel also offers that very desired intangible factor by giving a building an impressive look.

According to Ric Justus, the three primary benefits of specifying Kingspan products were a safer and quicker installation, a high R-value with less thickness of roof stack, and less layers of product to handle on site. Justus said he thinks KingZip roof panels and Kingspan insulated metal panels will continue to become a more standard cladding material on commercial buildings in the Southwest. "We believe, based on the last five years of building projects here at CAFB, that KingZip has great potential in this area," he said. "All the customers, designers, and contractors I know just love these products.

For the Special Forces hangar at Cannon Air Force Base, KingZip standing seam insulated metal roofing panels and 300 Azteco IMPs provided the best way to update and enhance an existing building. Today, with KingZip insulated roof panels and Kingspan Azteco insulated metal panels, U.S. Special Forces has an impressive mission capable facility at Cannon Air Force Base.

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Based in DeLand, Florida, Kingspan Insulated Panels North America is a global leader in the manufacturing of insulated metal panels (IMPs). The panels are a significant first step to achieving net-zero energy status and contribute to earning U.S. Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED®) credits.

To learn more, visit either www.KingspanPanels.us or www.KingspanPanels.ca.