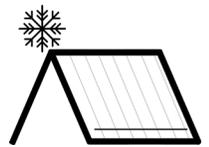




Case Study — Pikes Peak Summit Complex ColorGard® & S-5-V Clamp



Project Name

Pikes Peak Summit Complex

Location

Colorado Springs, CO

Architects

GWWO Architects;
Architect of Record: RTA Architects

General Contractor

GE Johnson Construction

Roofing Contractor

Weathercraft Company of Colorado Springs

Roof Profile

Drexel Metals 22-gauge DMC 200S,
2" mechanically seamed metal roof

Industry

Government

The Situation

The Pikes Peak Summit Complex is located 14,000+ feet above sea level and experiences heavy snow loads, high winds and extreme cold temperatures. The roofing contractor wanted a penetration-free, fully-engineered, aesthetically pleasing snow retention solution for the center's new standing seam metal roof that would both match the roof and last the life of the roof.

The Result

ColorGard® was custom-designed and engineered for this project to mitigate potential rooftop avalanches, which could pose a serious threat to staff, tourists and property below.

Project Stats

Roof Measurements: 61 squares over the lobby and a portion of the main building

Roof Slope: 1:12; 16-foot elevation on the north; 40 foot on the south

S-5! Products Supplied:

- **ColorGard®** (33 8' sticks punched, anodized in dark bronze)
- **S-5-V** clamps (199)



Moss Photography



The Project

Standing at 14,115 feet above sea level, Pikes Peak is home to majestic views, a National Historic Landmark, more than a half a million visitors per year, and for the past three years, the highest construction site in North America. The \$60 million, 38,000-square-foot visitor center, Pikes Peak Summit Complex, opened in June 2021 and is a popular tourist attraction to visitors near and far.

Clad in material similar to Pikes Peak granite and designed for visitors to take in its surrounding beauty, richness and scenery, this two-building campus features a visitor's center with dining and rooftop terraces, a utility facility, and a high-altitude research and communications center. It has multiple observation decks offering sweeping views and features interpretive outdoor exhibits and digitally interactive displays on the history, significance and geology of Pikes Peak.

The center features a Drexel Metals 22-gauge DMC 200S, 2" mechanically seamed Corten steel standing seam metal roof with S-5! **ColorGard®** snow retention.

The Challenge

The weather on Pikes Peak can be cold, icy, windy and generally unforgiving. By October, temperatures can plummet to zero, with wind chills diving even lower. Construction was limited to just six months of the year from May through October. Construction crews worked short shifts to help avoid potential health effects from working at altitude. Workers were required to pass extensive physical examinations to ensure they could handle the reduced oxygen levels, nearly half of that in Colorado Springs—impacting the overall construction schedule.

Snowstorms sweep in quickly, with wind gusts reaching 150+ mph. During the winter, temperatures can drop to -40 degrees with an average annual snowfall of more than 6 feet. Roof design snow loads are 125 pounds per square foot on the Peak vs. an average of 30 pounds per square foot in nearby Colorado Springs.

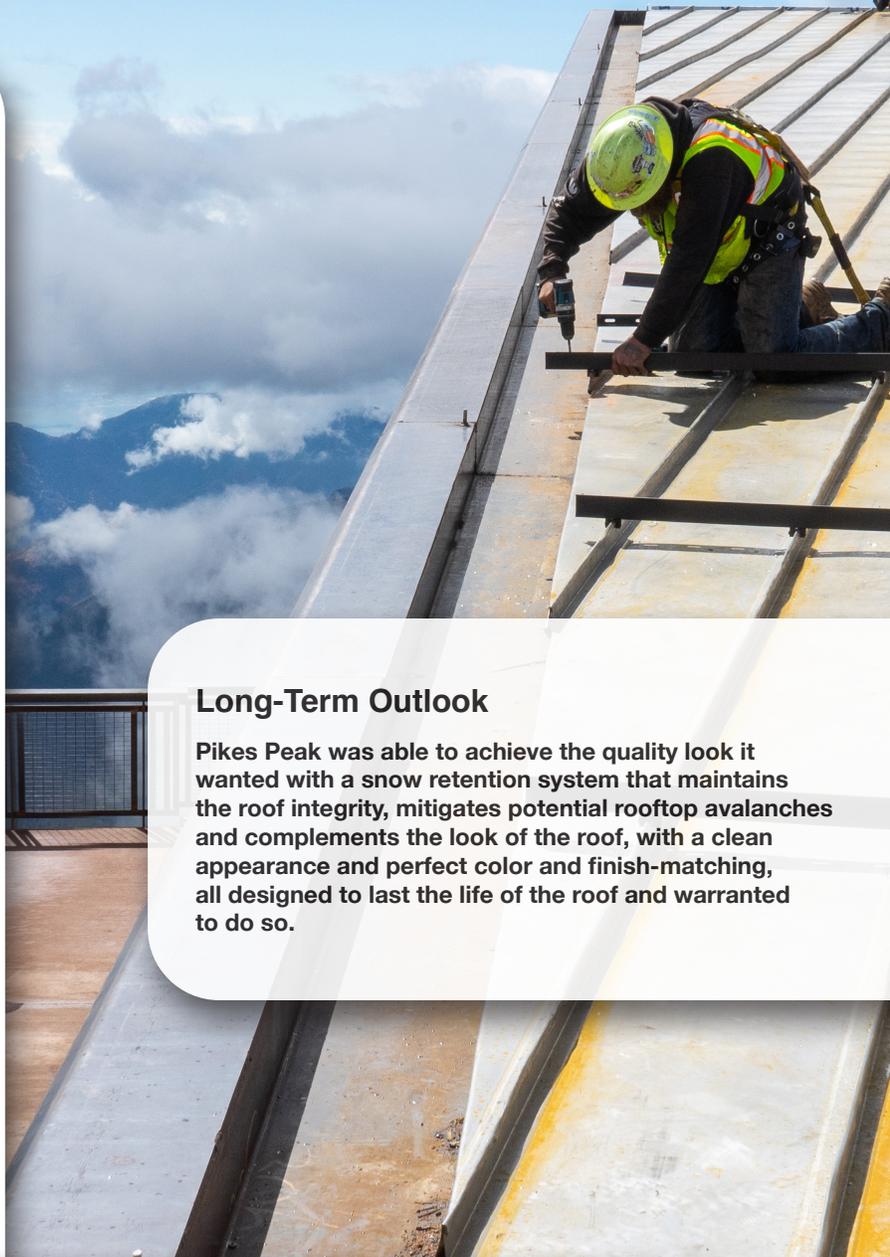
Installing a roof in such extreme weather conditions was extremely challenging—the wind, the snow, freezing temperatures, limited construction hours and ensuring equipment could operate in such conditions made every day a challenge.

The Solution

To minimize working at altitude, the team premanufactured the entire building shell at a lower altitude in prefabrication shops. Once designed, the size of each transport load had to be carefully calculated, as materials needed to be delivered up the steep and winding, limited weight-bearing capacity road. It would take hours to haul heavy loads just a few miles.

Having used S-5! ColorGard snow retention on a lower roof at the Pikes Peak Gateway entrance, park administrators were experienced with the product and appreciated the safety it provided. ColorGard was custom-designed and engineered to withstand the extreme winter conditions and dramatically reduces the risk of sudden and unexpected release of snow slides while providing a long-term solution for the life of the roof.

The new Pikes Peak Summit Complex is an extraordinary place to visit, with unobstructed inspiring views – a place where all people, no matter age or fitness level can experience the summit of a magnificent Colorado 14er.



Long-Term Outlook

Pikes Peak was able to achieve the quality look it wanted with a snow retention system that maintains the roof integrity, mitigates potential rooftop avalanches and complements the look of the roof, with a clean appearance and perfect color and finish-matching, all designed to last the life of the roof and warranted to do so.

How Did S-5! ColorGard Help?

- Anodized product provided the aesthetic solution the architect desired
- Provided safety measures to staff and tourists entering and leaving the visitor center
- Eliminated the risk of a voided roof manufacturer warranty—no holes/no damage
- Reduced the amount of product and cost required due to S-5! engineered system capacity

“Working at an elevation of 14,115 feet presents many challenges, and snow retention was just one concern. We were very familiar with our friends at S-5! and wanted to partner with a quality local company. S-5! was able to anodize its ColorGard and clamps in a dark bronze finish to complement the weathering steel look of the metal roof, meeting the aesthetic requirements of the architect.”

— John L. Fleming, Jr., President, Weathercraft Company of Colorado Springs



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