



JOHNS MANVILLE PRODUCTS PERFORM AT 14,000 FEET ON “AMERICA’S MOUNTAIN”

Time-tested, gravel-surfaced BUR system delivers high R-value at high altitude



Description: Johns Manville (JM) was a proud participant in a massive, multi-year project to construct a new High Altitude Research Laboratory (HARL) on Pikes Peak summit in Manitou Springs, Colorado. This modest-size but crucial 3,000-square-foot structure serves as both a weather data-collection facility and a shelter for the U.S. military personnel who routinely train in the extreme conditions of the 14,115-foot-high mountaintop.

Challenges: Because of its location, the teams from Superior Roofing, GE Johnson Construction Company, JM and RTA Architects faced four major challenges on this project. First, they had to work against the extreme, often unpredictable weather conditions during the installation. Next, the team had to construct structures that would withstand those extreme elements. Logistics was another challenge — simply getting the materials staged safely on the mountain peak and doing the work in a manner that would not disrupt the flow of traffic at the popular scenic destination. Last, they had to select an experienced construction crew who were healthy enough to withstand the high altitude and harsh temperature conditions and who were also willing to work during off-peak hours.

Solutions: Michael Riggs, an associate principal with RTA Architects, knew at the outset that the environmental requirements for this project were demanding and, therefore, required focused planning. He also knew that working to determine the right R-value for the roof, wind speed and wind-event performance called for a collaboration with consultants from CPP Wind. As a result of this collaboration, his team designed a roofing system that would withstand three-second, 195 mph gusts. To put things in perspective, most commercial roofs in less extreme environments are installed to perform at wind gust speeds of up to 90 to 100 mph.

Achieving a high R-value was equally crucial — the building must be warm and habitable during extreme conditions and be energy efficient. With snowfall up to a third of the year and sub-zero temperatures for just as long, the roof required a highly insulated system with an R-value of at least 57.6. Alex Hannum, project manager for Superior Roofing, discussed the key reasons they selected JM to provide the roofing material: “We wanted Johns Manville for the roof because they’re the long-time leader in Built-Up Roofing systems. Their proven track record with this style of roof was exactly what we needed to achieve the high R-value and to stand up to the high winds at this unique location.” In response to this challenge, JM supplied the Superior Roofing team with an insulated, four-ply, gravel-surfaced BUR roofing system. By using three layers of 4.2” JM ENRGY 3[®] polyisocyanurate insulation and cover board, JM and Superior Roofing delivered a system with an R-value just above 73. In addition, the HARL building is located on a scenic mountaintop — as such, it needed to blend in with the landscape as much as possible. JM BUR is available with a gravel surfacing that naturally fades into surrounding mountain scenery.

Joe Opyd served as the senior project manager for the general contractor, GE Johnson Construction Company. Joe credits the success of the project to extensive pre-project logistical planning, selecting the right team and everyone on that team working together. An example of the unique logistical planning that went into successfully executing this project is how GE Johnson needed to invest in a special equipment hauler that could navigate the narrow and short switchbacks on the scenic highway leading up the mountaintop. In addition, it is hard for people who are unacclimated to the thin-air conditions on the high-altitude mountain to breathe and perform strenuous work — especially during the early morning/late evening times when the teams needed to work to avoid disrupting tourists’ access and enjoyment of the mountain views. As such, Joe knew the project required construction crew members to undergo extensive physical examinations to ensure that the team was healthy and could safely spend long hours over consecutive days performing rigorous work. Joe praised his roofing team in meeting these unique requirements and challenges: “Superior Roofing was my top choice for this project, and they did a great job. They effectively handled any issues that came up, stayed on budget and delivered on time.”

Location:
Pikes Peak Summit,
Manitou Springs, Colo.

Contractor:
Superior Roofing
Alex Hannum, Project Manager
JM Peak Advantage[®] Peak Contractor

General Contractor:
GE Johnson Construction Company
Joe Opyd, Senior Project Manager

Architect:
RTA Architects
Brian Calhoun, Principal, and
Michael Riggs, Associate Principal

Industry Affiliation:
National Roofing Contractors Association

JM Roofing Solution (4GIG):
20-Year Peak Advantage[®] Guarantee

DynaBase[®] HW
ENRGY 3[®] Polyisocyanurate
SEUROCK[®] Gypsum-Fiber Roof Board
GlasBase[™] Plus
GlasPly[®] IV

