


VENTED POLYISOCYANURATE PANELS
HELPS KEEP THIS STANDING-SEAM
ROOF INSULATED.

Cold Roof Keeps Hot Springs Safe in Wyoming

by Tony Matter, freelance writer for the construction industry



amous for being home to one of the largest collections of mineral hot springs in the world, Thermopolis, Wyoming, is a haven for anyone looking to be surrounded in the natural beauty of small-town-America. While the pristine setting and relatively low-key lifestyle of Thermopolis has its obvious advantages, it also comes with a price for the town's local firefighters. Thermopolis, a town of only 3,200 people, is the largest community in Hot Springs County and therefore holds the distinction of being the county seat. Thus, Thermopolis and its 20-member volunteer fire company are in charge of protecting the 22,100-square-mile county in the event of a fire.

Covering such a large area requires a large number of fire trucks and equipment. The fire company was beginning to suffocate in its small, outdated fire hall located in downtown Thermopolis. Built over 80 years ago, the fire hall was a 1,400-square-foot facility that no longer met the needs of the county or the firemen in charge of protecting it. According to Tim Anderson, chairman of the Hot Springs County Fire District, the building could no longer accommodate the district's growing number of fire trucks. "Our old facility was just not big enough to

hold all of the newer, larger equipment that we have purchased in the past few years," said Anderson. "We have been parking some of our trucks offsite because there was not enough room in the old facility."

To solve its problem, the Hot Springs County Fire District's board of directors began lobbying for a new fire hall to be constructed, and a few years ago got its wish. Working with JGA Architects in Billings, Montana, Anderson and the rest of the district's board of directors helped design a new structure that catapulted the department into the 21st Century. JGA designed the new facility to meet the firemen's current needs while giving them enough room to grow in the future. The new building features 22,000 square feet of usable space, dwarfing the original fire hall by more than 20,000 square feet, giving the fire district the room and resources needed to protect the county adequately.

In a symbolic gesture that signifies the building's true intentions, the new fire hall features a bright red, standing-seam metal roof that looks as though it has been perfectly color-matched to the firetrucks parked inside. David Petersen, architect at JGA, was in charge of designing the building and for the roof he opted to specify a cold-roof system that features nearly seven inches of

vented and traditional polyisocyanurate insulation from Hunter Panels LLC. The cold roof is intended to keep Wyoming's notorious snow and ice from melting and sliding off the roof, which could result in injuries, damage equipment, and ultimately hinder operations.

To make this cold-roof system possible, Petersen specified the use of Hunter Panels' Cool-Vent™, a vented insulation panel. Cool-Vent is a three-part product consisting of a 4' x 8' NexGen Chemistry™ polyisocyanurate foam insulation board, a middle layer of wood spacers, and a top layer of 4' x 8' plywood. Cool-Vent provides 92% open air space and allows for 75% lateral air movement throughout the roof assembly, which was essential to the cool-roof system that Petersen designed. The vented, Cool-Vent insulation keeps a continuous flow of air moving through the roof system that cools the metal roof panels and helps keep rooftop snow and ice from melting.

According to Petersen, this type of cold-roof system is beneficial in Wyoming, and it is one that he has specified numerous times for other buildings in the area. "Because of its durability and aesthetics, metal roofs are very common in this area. The vented insulation is what makes them possible, and

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Firehouse

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even more so, practical," said Petersen. "Standing-seam metal was our choice from the beginning and we never really considered any other roofing options."

Keeping the rooftop cool is only part of the reason that Hunter's polyiso insulation and Cool-Vent were selected for this building. The excellent insulation qualities of Hunter's polyiso insulation were also a factor. In addition to providing increased air flow, the 5" Cool-Vent used on this project provided an R-value of 21.7 while the standard polyiso contributed an R-value of 10.3. "As a way to keep energy costs down and stabilize the interior temperatures of this building, we were aiming for an R-value of 30," said Petersen. "With the two Hunter Panels products that were installed, we ended up with an overall R-value of 32, which will help keep the building's winter heating costs in check."

Construction of the new firehouse began in May of 2006 and was headed up by Mid Valley General Contractors from nearby Riverton, Wyoming. Mid Valley subcontracted the roof installation for the new firehouse to Schrader Metal and Design, from Cody, Wyoming. Before Schrader's workers could install the polyiso insulation and Cool-Vent on the t-shaped building that features three different roof levels, they had to lay down a six-mil poly vapor barrier. The vapor barrier helps eliminate vapor infiltration into and out of the building, further reducing its energy demands. When all of the 20' x 100' rolls of vapor barrier were loose-laid into place, Schrader installed Hunter's 1.7" standard polyiso. The insulation was also loose-laid and quickly covered with the 5" Cool-Vent. After the Cool-Vent was placed on top of the traditional polyiso, Schrader used Hunter's nine-inch fasteners and plates to attach both products directly to the building's brand new steel roof deck.

According to Gene Schrader, owner and estimator for Schrader Metal and Design, his crew had never used Hunter's insulation products before, but they were very pleased



with its ease of installation, particularly the Cool-Vent. "We used a similar vented insulation product from a different manufacturer in the past and our installers had a hard time fitting the pieces together. There always seemed to be gaps between each subsequent piece," said Schrader. "Hunter's Cool-Vent was much easier to use. The guys really liked it and given the chance, we would definitely use it again."

After the Cool-Vent was fastened, a peel-and-stick shield for ice and water was adhered around the eaves of the roof to prevent ice damming, a common problem with metal roofs in Wyoming. Following the ice-and-water shield was a synthetic underlayment that was mechanically attached to the entire roof. Schrader then fastened clips to the Cool-Vent that hold the 22-gauge, 17" wide Kynar®-coated metal roof panels in place. To complete the roof installation, Schrader installed perforated soffit that allows air to flow into the Cool-Vent and out the ridge.

In addition to the new, cold roof system, some of the building's other enhanced features include a much larger apparatus bay that houses all of the district's 14 fire trucks, offices, meeting spaces, and additional room for hazmat and emergency vehicles. The entire project, from conception and design to roof installation and touch-up work, took a couple of years. But, according to those involved, it has been well worth the wait. "We couldn't be happier with the new building," said Anderson. "We now have enough room and resources to adequately protect this beautiful county and the unique roof system offers us the protection we need to do that."

Built on a hilltop overlooking downtown Thermopolis, the large new fire hall stands as a symbol of the commitment that every volunteer firefighter has made to serve and protect their county. With the help of a premium roof system and Hunter Panels' polyiso insulation products, the necessary resources so vital to those 20 volunteers will also be protected for a long time.