Alaskan retrofit roofing project meets many challenges

By Marge O'Connor

Retrofitting the roof of an immense, A-frame style warehouse in Alaska last fall proved to be an interesting project for all involved. The job had many challenges – difficult weather conditions, an extreme slope to the roof, some deterioration on the roof and a short time frame for completion.

PRECONSTRUCTION

The roof on this warehouse at the Agrium Kenai Nitrogen Operations in Kenai, Alaska is 190 wide 460 feet long with a 7:12 pitch that is 25 feet high at the eave and about 90 feet to the ridge.

The facility is 460 feet long and 190 feet wide with a roof pitch of 7:12 that is 25 feet high at the eave and about 90 feet to the ridge. Located in Kenai, Alaska, it is the second largest operation of Agrium, a worldwide producer of agricultural products. Each day 4,000 tons of ammonia and 4,000 tons of urea for agricultural use are produced at this location.

Rocky Doty, maintenance craft supervisor for the Agrium Kenai Nitrogen Operations, said his company's greatest need for repairing the roof focused on maintaining the quality of its products stored inside. The roof had developed several leaks, which posed a potential problem for the Agrium products that must be kept dry during storage.

Doty was responsible for getting the problem solved. He decided that retrofitting the roof was the best overall solution, but not just because he was working on a very tight time frame. "Even if I didn't have to have it done in a hurry, I would have retrofit it anyway," said Doty, citing the age of the structure, condition of the roof and the ease of installation.

Doty's immediate challenge was getting materials to the site. A decision to retrofit the roof was made in August and approved on the 15th of September. Doty con-tacted suppliers right away so materials could be shipped in time to start the project in October and finish before the extreme cold set in to Kenai.

Doty had specified a 24-gauge Galvalume Y-36 roof panel system from Morin Corporation, Bristol, Connecticut and a retrofit attachment system from Roof Hugger, Tampa, Florida. Both suppliers made arrangements to ship product immediately.

Roof Hugger had the longest distance to ship materials, so it took some dramatic steps to get →

EMCO installed steel cables across and over the structure so its crew would have a 100 percent tie off at all times while retrofitting the facility. They installed a Y-36 system from Morin Corporation that features a 24-gauge Galvalume panel that is 1.5 " deep and 36 " wide.

CONSTRUCTION

its 26,000 lineal feet of product there on time. "We hired a cargo plane to pick up a 6,000-pound partial shipment on September 30. The rest of the Roof Huggers were put on a flatbed truck that was team driven across the country to Fife, Washington. On October 4 the shipment was put on a barge, which took it directly to the warehouse site on Prince William Sound in Kenai," said Dale Nelson, president of Roof Hugger.

At the same time, the roofing contractor EMCO (Engineered Metals Company Inc.) of Sacramento, California, began planning out the job and assembling materials and manpower. EMCO is an International sheeting contractor with a staff of 125 that includes foremen, journeymen and apprentices. The company has been working in Alaska for 21 years and maintains crews there permanently.

Dave Stone, president of EMCO and project manager for the Agrium job, began assessing weather conditions and the challenging slope of the roof. He got release on the job in September and crews began work the first of October.

"We knew we were facing some severe weather conditions, but the real challenge was the wind. The building is right on Prince William Sound where the prevailing winds are 10-15 mph. The high winds and steep slope of the roof posed a real safety problem for us," said Stone.

Stone took the first step in creating a safe working environment. He invested $10,000 in steel cables, which were run across and over the structure so his crew would have a 100 percent tie-off at all times. The second step was recognizing how the Roof Huggers actually worked as a ladder up the building.

The Roof Hugger systems is installed before the panel system and placed within 5′ of each other and within 2.5′ in the high wind areas. This set up was a big help as EMCO laborers maneuvered to install the 36" wide Galvalume panels.

The other challenge for Stone was the condition of the existing roof. "The structure was built in 1967 and at one point the company had sprayed a coating on the panels to hold off leaks and rust. We were concerned about the coating, possible rusted out spots and some insulation sheets underneath the roof that we couldn't access," Stone added.

Using Roof Huggers helped in both these areas, according to Stone. EMCO had no experience with the Roof Hugger system prior to the job but received all the information and assistance they needed from Roof Hugger to make the job go smoothly.

Stone signed off on the job December 31, completing it right on time in spite of the fact that the project was shut down for several days around Thanksgiving because of the weather. "I never thought I'd find myself happy to be in Alaska at the end of December, but it was good to see the new roof completed. It looks great and the client is very, very pleased," said Stone. ●

CONSTRUCTION

COMPLETION

The roof of the Agrium warehouse soars up like an A-frame to meet the angle of repose of the fertilizer materials stored inside it.