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Badger State Fruit Processing's new cold storage facility houses 200 million pounds of Wisconsin cranberries.

When it has to stay 'berry' cold

Cranberry processor knocks down 3 tough cold storage challenges

As Butch Gardner hauls cranberries between two cold storage facilities on the Badger State Fruit Processing property in Pittsville, Wis., he gives the "thumbs-up" to plant manager Mark Konrardy for a job well done. Konrardy met three tough challenges for the construction of a new cold storage facility, built to house Badger's 200 million pounds of cranberries with room to grow.

Gardner, owner of Badger State Fruit Processing, recently completed the 2012 cranberry harvest. Badger State's 200 million pounds of cranberries represents about 45 percent of Wisconsin's enormous crop. With Wisconsin's claim to the largest cranberry-producing state in the union, that's no small potatoes. According to Gardner, Wisconsin harvests about 52 percent of the world's cranberries.

"Right now I grow, sell, and process cranberries for all of the buyers in the states—including the very biggest," he says. With 1,100 acres of cranberries, Butch Gardner is Wisconsin's largest independent grower. "Right now our cranberries are stored in our combined two cold storage buildings. With the new facility we'll go past that as new acres are planned to meet world demand for cranberry products."

The new cold storage facility had to be built to withstand many years of operation. Erected this past summer by Don Nikolai Construction, Marshfield, the galvanized steel building with IMP sidewalls measures 300 x 600 feet. The vast majority of it is devoted to refrigerator and freezer rooms with docking areas. It also includes space for the production floor and packaging room.

During the planning phase, Gardner issued a directive to his plant manager, Mark Konrardy. "The owner challenged me to find a way to keep our operating costs on the new cold storage facility low while achieving demanding temperature control requirements," explained Konrardy.

Insulated metal panels, architectural grade EPS insulation and efficient lighting all helped accomplish that goal.

The IMPs were manufactured and installed by a company called Midwest Cold Storage. "We wanted the biggest

Over half a million board feet of Foam-Control Plus+ architectural grade perimeter and underslab insulation were used in the construction of the new cold storage facility.

bang for our dollar," Konrardy said of the IMPs. Two other buildings on the property, one built in 2003 and the other in 2009, were built of the same steel and IMP materials and had proven effective and efficient in the long haul.

The choice of insulation, however, took some additional research.

"Our choice to use Foam-Control and Foam-Control Plus architectural grade EPS insulation evolved out of my research into materials that would meet performance, cost, constructability and environmental criteria. We wanted to make sure it wouldn't break down underground—it has to hold up for years of operation and not become damaged by moisture."

Nearly 2 million board feet of ACH Foam Technologies' Foam-Control flat EPS roof insulation and over half a million board feet of the manufacturer's new Foam- Control Plus+ architectural grade perimeter and underslab insulation were used in the construction of the new cold storage facility.

Mark Konrardy has had a long-term interest in environmental stewardship. "I set up a list of quantifiable parameters grouped into three categories: performance, cost and environmental stewardship. Within those categories I researched various materials available and when all was said and done, Foam Control EPS insulation came out the clear winner for several reasons," Konrardy added.

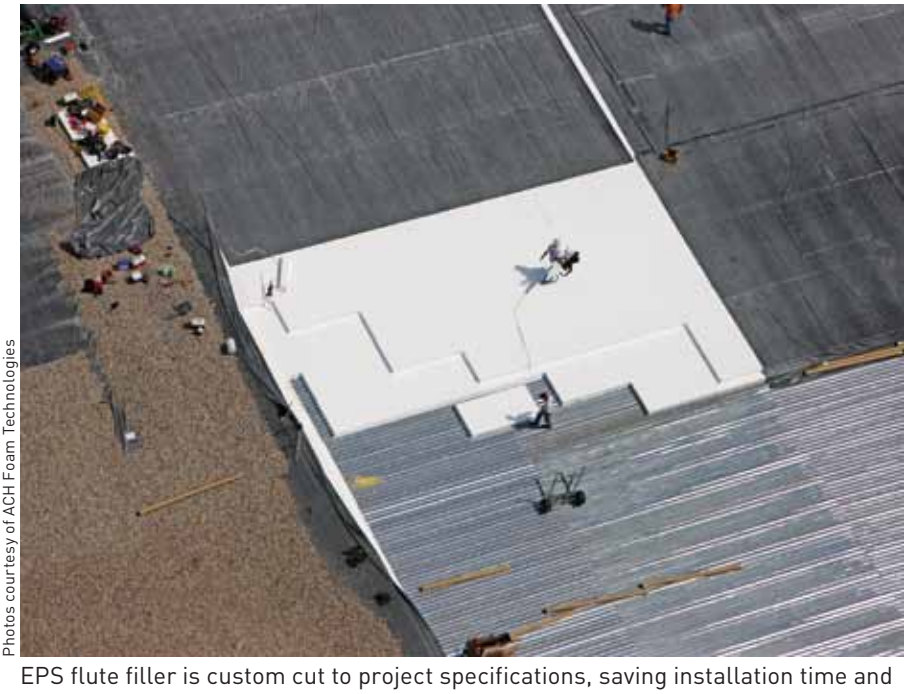
Compressive strength concerns were addressed by using Foam-Control Plus+ 400 (40 psi) for the freezer area and Foam-Control Plus+ 250 (25 psi) for the remainder of the perimeter and underslab areas. "I also researched the performance of rigid insulations when exposed to moisture," stated Konrardy, "and found that EPS has a higher permeability than XPS. That extra permeability allows trapped moisture to escape. This is a good thing, because it maintains its R-value better."

Konrardy also wanted to find an insulation that contained recycled content and didn't leach toxic chemicals into the ground water. "This was a great find for me: that Foam-Control insulations contain up to 15 percent recycled content in the code-approved labeled EPS. This is the highest percentage of recycled content of all the rigid foam insulations on the market," explained Konrardy.

The tipping point, according to Konrardy, was cost savings. R-value to R-value, EPS is 10 to 20 percent less expensive than other rigid foam insulations. "My decision wasn't that difficult," he added. "I was able to find a material that satisfied the criteria Mr. Gardner set out for me and satisfy my desire to make our plant greener."

The cranberry harvest ended in early November and Konrardy says the new freezer is packed full of frozen berries. The new building is serving the company's needs and the focus is now on finishing construction work on the packaging room.

For more information on ACH Foam Technologies circle 130.



Photos courtesy of ACH Foam Technologies

EPS flute filler is custom cut to project specifications, saving installation time and preventing scrap waste.