Flex FB Elvaloy® Solves Roofing Dilemma For Pet Food Maker

Pet food particles lead to big problem

Every manufacturing facility has a unique set of roofing problems. Located in Fairburn, Georgia, the roof on a 234,000 square foot processing and freezing facility for a nationally known pet food manufacturer is no exception.

Corn meal is a basic product ingredient, and particles accumulate everywhere, including on the roof. Corn meal particles on the flat BUR roof cause problems by sticking together and clogging drains, leading to water back-up and ponding. The maintenance remedy is to lightly power wash the roof on a regular basis to prevent the build up of corn meal particles. But the use of low-pressure (400 psi) power washing units to clean the roof also dislodged the granular material in the existing modified bitumen roof. With the granules gone, roofing experts estimate the service life of the roof was reduced from 20 years to 10 years.

Flex FB Elvaloy® solves the problem

The Manager of Engineering at the company consulted John Toth, Flex representative, to help find the answer. Toth determined that the same Flex FB Elvaloy® Adhered Roofing Membrane previously used on other sections of the same building was also the ideal solution for this application. Toth drew up new specifications for this final 44,000 square foot section of the facility roof. The specifications featured a combination BUR and Flex Single-Ply System, complete with Flex Architectural Metals. All details approved for the project were installed according to Flex specifications and recommendations.

Flex FB Elvaloy® membrane solves the special maintenance problem at the plant because it features a smooth white surface that allows regular power wash cleaning without degrading the roof's integrity. Unlike other modified thermoplastic single ply systems, Flex FB includes the DuPont ingredient Elvaloy® KEE, which makes Flex Single-Ply compatible with asphalt. This compatibility gives roofing specifiers greater design flexibility for special combination systems such as at this site. The Elvaloy®-based membrane also provides the chemical resistance required to protect the roof from the oily byproducts of the manufacturing process. Additionally, Elvaloy® is a solid plasticizer and does not leach out, so that the granular corn meal no longer sticks to the roof surface.

Getting down to work

On the installation side, the scope of work included removal of the existing BUR system, flashings, and insulation down to the hollow-core precast concrete deck. First, the deck was primed. Then a vapor barrier was adhered with hot steep asphalt, followed by 3/4" perlite insulation board adhered with asphalt. A base sheet and two fiberglass plies were then installed in Type III hot asphalt. Finally, Flex FB Elvaloy® Single-Ply membrane was installed with hot steep asphalt, providing the final outer layer.

Flex Architectural Coping Cap and Fascia products were installed to complete the 44,000 square foot job. This was the final section of the facility to be re-roofed. Total combined roof area with Flex FB and Architectural Metals is 234,000 square feet.

Flex roof membrane seams are hot-air welded. No solvents, glues or tapes are required.

Additional benefits

The Flex system offers additional benefits for warm weather conditions. Fred Bonner, owner of Bonner Roofing and Sheet Metal Company, outlined the situation. "This latest section to be covered with Flex FB Single-Ply is the primary manufacturing area, which houses large baking ovens for making pet food," said Bonner. "Interior temperatures regularly reach 120° F or more. It is typically so hot in this area that workers needing relief from the heat must stand directly beneath large air conditioning ducts at certain places on the manufacturing floor. The cooling units simply aren't able to handle the high volumes of heat generated by the ovens."

"The white Flex roof will reduce the interior temperatures at least 10° in hot weather and help improve working conditions. In the summer, the black BUR roof gets too hot to touch, but the Flex roof is actually cool to the touch even on the hottest days," said Bonner.

EPA Energy Star partner

Flex roofing systems are part of the EPA Energy Star Roof Products Program. The Energy Star label helps consumers easily identify energy-efficient products that meet EPA specifications for solar reflectance and reliability. Flex's reflective roof products can lower roof surface temperature by up to 100° F, resulting in a reduction of peak cooling demand from 10 to 15 percent. According to EPA studies, reflective roof products help decrease air pollution generated by power plants by reducing the nation's end-user energy needs.

Simplified solutions

Toth indicated another benefit to Flex specifiers. "Because Flex offers a complete package, including both membrane and metal components, customers have a single source warranty that covers all components of the roof system. This way the customer always knows who is backing up the performance of the roofing materials."

Roofing Contractor Fred Bonner reports, "Flex membranes go on easily, and the crew picks up the technique very quickly. The product is readily available, and Flex provides solid technical support."

The customer has a similar review on the end result. The company plans to specify the Flex FB Elvaloy® Single-Ply System at its other North American manufacturing facilities.

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