

Project Profile



Protecting roof structure and improving maintenance at grain milling facility.

Problem

The previous built-up roofing system at Bunge Milling had very little slope and was not designed to prevent standing water from entering the roof system. Heavy roof traffic, multiple penetrations, and inadequate flashings allowed water to enter the roof system and deteriorate the roof insulation.

The uneven roof surface and multiple penetrations with low clearances also made it impossible to thoroughly clean corn flour from the roof.



The old built-up roof was difficult to maintain and allowed ponding water to infiltrate into the insulation and concrete decking – threatening the building structure and operations at the milling facility.

Solution

D. C. Taylor Co. removed several inches of cracked built-up roofing and wet insulation. The D. C. Taylor Co. crew allowed the concrete deck to dry before installing heavy-duty 80-mil FleeceBACK® TPO in water-based bonding adhesive to the concrete deck. This created a smooth, puncture-resistant roof surface that is durable and easy to maintain.

The project took less than three weeks to complete.



The new roof features a smooth TPO surface and additional clearance under penetrations to allow easier and more complete cleanup of corn material that accumulates on the roof. A hot-air welded walkway was installed to prevent wear and damage from mill worker traffic.

**Bunge Milling
Atchison, Kansas**

Bunge is the largest corn dry miller in the world. From facilities in the U.S. and Canada, they supply corn grits, flour, bran, and meal to many of the continent's largest brewers, snack food manufacturers, and cereal companies.

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Investigation and Recommendation

Multiple core cuts were taken to determine the extent of moisture infiltration. Water trapped in the roof system and the need for a material that would flash around the unique roof projections led D. C. Taylor Co. to propose tearing everything off down to the concrete deck, and allowing it to dry before installing the new system. A temporary roof had to be installed in some areas to let the concrete dry overnight and to protect the exposed structure.



Maintenance Hazard

Many roof projections created low clearances that didn't allow complete cleaning and maintenance of grain material. D. C. Taylor Co. removed nearly 5 inches of built-up roofing material to improve access to these areas. Field formed and pre-fabricated projection flashing were installed on more than 100 angle-iron and pipe penetrations.



Special Safety Considerations

High-voltage electrical conduits were located in many areas of the roof, including the main access area where they hung approximately 6 ½ feet overhead. Timm Haefner, the D. C. Taylor Co. project superintendent, and Chad Rouse, project foreman designed a special rubber curtain and a plywood tunnel to reduce worker exposure to the electrical lines.

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Tim Kramer *Maintenance Superintendent* *Bunge Milling*

"We appreciate how D. C. Taylor Co. took the time to understand our working situation and recommend a roofing system that streamlines our maintenance procedures. The roofing crew kept us informed at every step, they maintained a clean and safe job site, and our plant operations had zero disruptions."