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The following article was published in a newsletter written by BASF Corporation.

Southfield Repairs Roof with BASF Products While Reducing Waste & Costs

The BASF Southfield site discovered a way to repair a roof at the facility using BASF products while reducing waste and cost, recycling materials, and increasing the life expectancy and safety of the roof. In early 2015, the site completed a roof survey that is periodically done to determine the condition of the roof. They determined that the main lab building roof needed repairs.

Michael Ashburn, maintenance supervisor, attended a PM group meeting at the Wyandotte site and learned about a spray foam insulated roofing system that uses BASF urethanes. Ashburn brought this information back to Kelvin Manni, engineering manager, and they did further research on the roofing system. They spoke with Moses Clark, PM national account manager and Pat McCoy, senior PM marketing applications specialist, who sell the BASF product that is used in the materials.

Ashburn learned that the roofing was already being used at the Whitehouse site so he talked with Karl Schnapp, manager of site and administrative services (Ret), and Jean Michael, Wyandotte's yard and utilities manager, to get their feedback on the durability and cost. They said that there had been no leaks or repairs needed with the new roofing. Ashburn said that Schnapp also noticed that the site's utility costs were lower which he attributed to improved energy efficiency from the roofing.

Ashburn enlisted the help of Michael Hijazi, senior civil engineer, and Dale Roush, senior designer, from the Wyandotte site to develop a roofing plan. The project went out for bid and was awarded to Insulated Roofing Contractors, a company that has used BASF products for over 20 years.

The roofing that needed repairs was a built-up roof, with layers of asphalt felts and gravel ballast, which makes it difficult to detect and repair leaks. Insulated Roofing Contractors uses BASF's spray polyurethane foam (SPF) which is an insulation product that is foamed in place during its spray application. If repairs are needed with SPF, there are no mastics, adhesives or hot asphalt needed as in the case of a built-up roof; the new material is just sprayed over the old. According to Manni, "It has increased the insulation value and we avoided doing a full tear off (of the built-up roof)."

To assess damage to the built-up roof, the contractor conducted a thermal scan at night to detect any trapped moisture in the asphalt felts. The contractor then removed 450 square feet of insulation to eliminate the wet roofing. In addition, all the gravel ballast was removed for proper adhesion of the BASF SPF system. Hoses attached to trucks on the ground were hoisted to the roof to vacuum off the gravel. There were 35 tons of gravel removed and recycled to a cement company for repurposing.

Because the gravel was recycled and the remaining good roof sections were able to be sprayed over, BASF reduced the amount of roofing materials going to a landfill by 80 tons. The use of the vacuum trucks also

reduced emissions from what would typically require 70 trucks hauling 20 yard dumpsters with the materials to the landfill.

Insulated Roofing Contractors used a rolling cart and safety railing covered with a burlap when applying the roofing to reduce overspray and contain the materials. They also added safety upgrades by installing six tie-offs to the roof for fall protection. When the foam is sprayed on it provides both a mechanical and chemical bond to the foundation. The cured BASF spray foam forms a smooth surface, providing a waterproof coating that is seamless and fully adhered to the building.

The foam cures within minutes which allows the contractor to spray even if rain is forecasted for the day. The contractor checked the weather throughout the day to determine the time they could spray. This greatly reduced the construction schedule, requiring only two weeks for the entire job.

With a team effort throughout the Midwest Hub, the main lab building on the Southfield site now has a new roof using BASF SPF which improves the integrity of the structure, making it more energy efficient while reducing maintenance costs. “This demonstrates BASF’s sustainable chemistry solutions at work,” added Manni.

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