CARLISLE SYNTEC SYSTEMS

FleeceBACK® KEE HP Roofing Systems

CASE STUDY

Willard High – A School with a Modern Profile

JOB PROFILE

PROJECT LOCATIONS:
Willard, Ohio

CARLISLE APPLICATOR:
M. Smith Roofing, Inc.

PROJECT DURATION:
Fall 2013 – Spring 2015

ROOFING SYSTEM:
- 115-mil Gray FleeceBACK KEE HP FRS membrane, fully adhered with FAST Adhesive
- Sure-Flex PVC Contour Rib Profile
- 2" SecurShield polyiso, 2½" SecurShield HD Composite board

In August 2013, the Willard City School District began to raze its current middle school and high school buildings and build a new, state-of-the-art facility that would house classrooms, administrative offices and athletic facilities for its Kindergarten through 12th grade students. Willard High is the only high school in the Willard City School District and this new facility would provide much-needed expansion and modernization for its 590 enrolled students. The new 200,675-square-foot building, which contains separate wings for Elementary, Middle, and High School, was completed in phases; the project began in the fall of 2013 and was set for completion in the spring of 2015.

There are many elements to consider when constructing a new building, not the least of which is choosing the right materials to ensure that the building will perform for the long haul. This was especially important to the Willard City School District, as its students' protection and comfort is an ultimate priority. Equally important, though, is quality of construction, which is why M. Smith Roofing, Inc., a commercial roofing contractor based in Shelby, Ohio, was chosen to install the roof system on the new high school.

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M. Smith Roofing was tasked with finding a high-performance roof system that would not only provide long-term durability, but would also enhance the school's modern aesthetic appeal. The team at M. Smith knew they wanted to use a roofing system manufactured by Carlisle SynTec Systems, one of the largest single-ply membrane manufacturers in the United States. With ten years of experience installing Carlisle SynTec roofing systems, M. Smith knew that a Carlisle system would be able to meet the school's criteria and even exceed their expectations.

In 2013, Carlisle introduced its Sure-Flex™ PVC Contour Rib™ Profile, a product that combines the appearance of a standing seam metal roof with the time-tested performance of a PVC single-ply membrane. The Contour Rib Profile is manufactured using the same PVC compound as Carlisle's PVC membrane, ensuring comparable weathering characteristics and an excellent color match. Carlisle's Contour Rib Profile is the industry's only rib profile that is dimensionally stabilized and strengthened by a ⅛" fiberglass reinforcing cord that runs the length of each section, and the product's rectangular profile provides exceptional shadow lines for visual appeal. Because of this unique combination of aesthetics and performance, M. Smith Roofing knew they wanted to incorporate Carlisle's Contour Rib Profile into the roofing system.

Carlisle's Gray 115-mil FleeceBACK® KEE HP (High Performance) FRS membrane was chosen for this project because of the excellent performance it would provide. FleeceBACK membranes provide exceptional resistance to hail, punctures, and tears, and KEE HP provides increased resistant to chemicals, pollution, oils, and acid rain. In addition to these benefits, Carlisle's KEE HP membranes incorporate

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> **KEE HP** is extremely durable and its wide window of weldability makes it simple to install. The solid nature of the KEE HP **minimizes smoke during the welding process and increases the flexibility of the membrane.**

DuPont® Elvaloy® KEE HP, a solid, high-molecular-weight plasticizer that will not migrate out of the membrane over time. KEE HP is extremely durable and its wide window of weldability contributes to a quick, efficient installation process, and the solid nature of the KEE HP minimizes smoke during the welding process and increases the low-temperature flexibility of the membrane. The Willard High School rooftop is complicated, with 18 different levels that contain more than 40 different sections. Because of the precise construction schedule, M. Smith Roofing needed a flexible membrane that would enable them to work in a variety of weather conditions to meet the project's deadlines.

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The M. Smith team began by covering the entire metal deck with a reinforced polyethylene vapor barrier. The next step was to mechanically attach two inches of Carlisle's SecurShield™ polyiso insulation, using eight fasteners per board, directly to the vapor barrier. Utilizing Carlisle's FAST™ Adhesive, the team then installed Carlisle's 2½" SecurShield HD Composite board, which combines a ½" high-density polyiso cover board with two inches of rigid polyiso insulation for optimal compression strength. Combined, this system boasts 4" of polyiso insulation with a ½" of coverboard, which will improve the building's energy efficiency, particularly during Ohio's cold winter months.

Once the insulation and coverboard were securely in place, the 10-foot-by-80-foot rolls of FleeceBACK membrane were adhered with FAST Adhesive; then 150-pound rollers were utilized to maximize adhesion. To flash around the numerous HVAC penetrations and pipes, the team used Carlisle's prefabricated gray PVC accessories, which were crucial to saving them time and labor on the rooftop.

Willard High's roofing system qualifies for Carlisle's 20-year Total Roofing System Warranty, ensuring protection and comfort for Willard High students for years to come while enhancing the profile of a modern, edgy campus that most students would be proud to call home.

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