

# FleeceBACK® KEE HP

Roofing Systems

## CASE STUDY

### Huron High School Gym Re-Roof



#### JOB PROFILE

**PROJECT LOCATION:**  
Ann Arbor, MI

**PROJECT SIZE:**  
39,500 square feet

**ROOFER:**  
CEI Michigan LLC.

**CONSULTANT:**  
WeatherTech Consulting Group

**PROJECT DURATION:**  
Two months

**ROOFING SYSTEM:**

- » Sure-Flex PVC Contour Ribs™
- » 135-mil gray FleeceBACK KEE HP PVC Membrane
- » Full spray Flexible FAST™
- » Two layers of 2.6" -thick Polyiso insulation

Huron High School is a public high school located in Ann Arbor, Michigan, near the banks of the Huron River. The school, which opened in 1969 and serves about 1,500 students in grades nine through 12, is shaped like an “H”, with two convex wings adjoined by a two-floor archway. Notable Huron High alumni include Olympic medalists, professional athletes, journalists, a Presidential speech writer, and the creators of Adobe Photoshop. The school was also featured in the 2008 movie *Jumper* starring Samuel L. Jackson.

Sports are a big part of the culture at Huron High School. In addition to basketball, football, and baseball, students can participate in water polo, figure skating, and equestrian events. However, the dome-style roof over the gym was past its prime and had begun to leak. The decision was made to replace the old roof in the summer of 2018.

The Huron High School gym roof is a large dome – approximately 39,500 square feet – with a unique built-in gutter that wraps all the way around its perimeter. Due to the complication of the project, WeatherTech Consulting Group, who served as the consultant for AAPS, reached out to CRS, the Michigan-based Carlisle Rep, for their assistance with design, material selection, and quality control meetings. Their main objective was to specify a high-quality, low-maintenance roof that would perform for a long time and stand up to the harsh Michigan weather, saving the school district money over the long term.

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They chose a gray FleeceBACK KEE HP PVC system adhered with Flexible FAST Adhesive because of its long service life, exceptional weatherability, flexibility, and toughness, and excellent resistance to wind uplift, hail, and punctures. PVC Contour Ribs, which simulate the look of a standing seam metal roof, were added to the design to give the dome an “architectural” look and to showcase the unique roof section.

On a complex project like this one, picking the right roofer is critical. CEI Michigan LLC., headquartered outside Ann Arbor, was selected to take on the job. CEI has been installing single-ply roofs since the 1970s and their veteran roofers provide a level of craftsmanship and experience found at few roofing companies in the country. CEI’s wealth of knowledge allows them to take on any project, so over time, they’ve come to specialize in tough jobs that require teams who are highly skilled and knowledgeable about a wide range of roofing systems.

Upon examination of the leaky roof, the CEI crew discovered the existing insulation was a single layer of 1.5-inch-thick 4' x 8' boards that had been mechanically fastened to the concrete deck. Using large, flat 4' x 8' boards on a dome-shaped roof put a lot of strain on the fasteners, which eventually failed, so the insulation was no longer contouring to the roof deck and was pushing up against the membrane in some places. This caused localized failure of the membrane, and water had leaked into the roof system and the building in several spots.

To begin the project, the existing roof system was torn off down to the domed concrete deck. Two layers of 2.6-inch-thick 4' x 4' Polyiso insulation were then mechanically fastened to the deck with the joints staggered.

The next step was figuring out the best way to lay out the membrane. This was especially difficult because the roof is

not flat, and the FleeceBACK membrane CEI installed is some of the thickest on the market. Gary DeLong, Superintendent at CEI, embraced the challenge of devising a layout in which the membrane laid flat while wasting as little material as possible.

Once the layout was finalized, the CEI crew adhered the membrane using Flexible FAST Adhesive. Flexible FAST is VOC-free, impact-resistant, and provides excellent wind uplift resistance in a totally non-penetrating application. After the sheets were securely in place and the seams had been welded, the crew installed the PVC Contour Ribs, which were spaced at 10 feet on center at the bottom of the dome and came to a small circle at the top. The layout for these ribs also proved to be difficult. To ensure that the first ones were perfectly straight, Gary had devised a plan to measure the dome to create the precise layout from the first rib to the last.

The project took two months to complete and was done by the time students returned to class in the fall. With a fully adhered Carlisle FleeceBACK KEE HP PVC system installed by one of the leading single-ply roofing contractors in the country, Huron High School students, athletes, and spectators will be protected from the elements for decades to come.

