CARLISLE SYNTEC SYSTEMS

Sure-Seal® EPDM Roofing Systems

CASE STUDY

Chambersburg YMCA

The Chambersburg Memorial YMCA in Chambersburg, PA, is a highly active organization focused on youth development, healthy living, and social responsibility, with the belief that a strong community can only be achieved when we invest in our kids, our health, and our neighbors. The state-of-the-art facility includes three gymnasiums, two pools, racquetball and squash courts, a fitness center, as well as youth and teen centers.

For the past several years, the facility has been updating its roughly 50,000-square-foot roof one section at a time. After 37 years of performance from the existing EPDM roof, it became time to re-roof a 7,000 square-foot section positioned over one of the natatoriums.

Ream Roofing Associates, a firm based in Dallastown, PA, was hired to install the new roof section over the YMCA's pool. Ream Roofing is a fourth-generation, family-owned commercial/industrial roofing company serving the Mid-Atlantic region and specializing in single-ply systems and architectural metal. The company has been a Carlisle Authorized Applicator for many years and is also a member of the National Roofing Contractors Association (NRCA).

"We've worked with the YMCA in the past," said Donnie Sanders, President and owner of Ream Roofing. "We were very excited to win the bid for the natatorium project and the challenging work it provided."

JOB PROFILE

PROJECT LOCATION:
Chambersburg, PA

CARLISE APPLICATOR:
Ream Roofing Associates

BUILDING OWNER:
Chambersburg YMCA

ROOFING MATERIALS USED:
Carlisle Sure-Seal 60-mil EPDM
EPDM x-23 Bonding Adhesive
Two layers of 2.6-inch-thick SecurShield® Polyisocyanurate Insulation
Flexible FAST™ Adhesive
VapAir Seal™ 725TR Air and Vapor Barrier
CAV-GRIP® III Adhesive

The existing ballasted EPDM inverted roof membrane assembly (IRMA) was at the end of its service life after 37 years. The existing system was installed on a concrete deck and included loose-laid EPDM, four to six inches of extruded polystyrene (XPS) insulation, protection mat, and gravel ballast over the top.

The YMCA's executive team and board of directors were very interested in the potential environmental aspects of the project, and in recycling or re-purposing whatever materials from the roof that could be salvaged.

"We are fortunate to partner with Scott Bothe, Carlisle Manufacturer's Rep at Commercial Roofing Solutions (CRS), who completed our roof assessments, provided recommendations, and introduced Carlisle's Rooftop Recycling Program to our leadership team," said Carla Christian, Executive Director of the Y. "At that point it wasn't a question, it was why wouldn't we recycle? Donnie and his team at Ream Roofing took it from there."

Carlisle has partnered with Nationwide Foam Recycling (NFR) since 2014 to recycle and repurpose TPO, PVC and EPDM roofing membranes, as well as XPS, EPS, and Polyiso insulation. Once they won the YMCA bid, Ream Roofing immediately started to map

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out the process for recapturing as much of the old roofing materials as possible.

"This was a win-win for everyone," said Sanders. "First and foremost, we avoided sending materials to a landfill by reclaiming materials that can be used for other applications, and we also saved on dumpster fees and pull charges. It's a great program for us, for our customers, and for the environment."

Prepping the Roof - The first step in the project was to strip the old roof down to the concrete deck. After vacuuming off the ballast the crew of eight removed and neatly stacked the 2x 8-foot XPS insulation, which would eventually be sent to NFR for processing.

"Removing the insulation on this project was very easy," said Sanders. "There were four- to six-inches of insulation on the roof, and we were able to capture about 95% of it for reuse."

Unfortunately, the original EPDM membrane on the roof was set in asphalt, so peeling that up from the deck proved to be difficult and time consuming. More importantly, the old membrane did not come up in nice large pieces that could be salvaged for re-use and had to be trashed. However, the Ream team was able to re-claim and ship nearly a truckload of used XPS insulation back to NFR for reuse.

Once the roof was cleared of the old IRMA roofing system down to the concrete deck, Ream started with the installation of the new roof. The first step was installing Carlisle's VapAir Seal 725TR Air and Vapor Barrier directly to the concrete deck. The vapor barrier is a 40-mil composite consisting of 35-mils of self-adhering rubberized asphalt laminated to a 5-mil woven polypropylene film. The concrete deck was first primed using Carlisle's CAV-GRIP III Adhesive/Primer, which was sprayed on the concrete deck, before the air/vapor barrier was rolled into place.

"Having a vapor barrier on this section of the roof is critical," said Sanders. "There's quite a bit of moisture in the air below the

roof deck from the pool which we want to prevent from migrating through the deck and into the roof assembly, where it could condense in the cooler air and add water into the assembly." The use of dark colored EPDM is an added safety factor against condensation issues within the roofing assembly. Once the air and vapor barrier was installed, the team installed two layers of 4 x 4-foot sheets of 2.6-inch-thick SecurShield Polyisocyanurate

CASE STUDY

insulation, which was adhered with Flexible FAST Adhesive. In addition, they installed several crickets on the roof for better drainage to the existing rooftop drains.

The last step was installing the non-reinforced Sure-Seal 60-mil EPDM membrane. The EPDM was installed using Carlisle's EPDM x-23 Low-VOC Bonding Adhesive, a high-strength, solvent-based contact adhesive which is ideal for securing the membrane to the insulation.

"For a job this size, we really liked using the Carlisle x-23 Bonding Adhesive," said Sanders. "The product spreads easily with Better Spreaders, so we didn't need to bring any large carts or other equipment onto the roof. It was a relatively fast and convenient process."

"For this project there really was not any additional labor to reclaim the insulation," said Sanders. "Given the costs of disposal today, we always have someone carefully loading the dumpster to maximize the space. We utilized that team member to stack and wrap the insulation for transit on a flatbed, rather than stack it in the dumpster." Sanders also explained that working with Nationwide Foam Recycling is a very easy process. "This was not our first time working with NFR," said Sanders. "They have always been very responsive to our requests for pricing, they communicate exceptionally well, and they are always very timely in their service. We enjoy working with them."

According to Sanders, the biggest challenge for these types of projects is preparing the team and setting the job up efficiently before the work begins to both educate the team and get everyone on the same page at the outset.

"Changing processes and procedures on a roofing project can certainly create some challenges, but taking the time to explain and prepare the team for the changes prior to commencement of the project was key. Once our team understood the goal and the importance to the YMCA, the crew executed to perfection," said Sanders.

In the end, the YMCA's executive staff and board were pleased with the outcome, and in preventing several dumpsters of insulation from going to the local landfill. "We were extremely impressed with the process and proud to be part in an environmentally conscious effort as well." Christian noted, "It was a win, win!"

"It's highly rewarding to provide a needed service to a great organization that does so much for the community and finding a way to positively impact our environment in the process," said Sanders.

CHAMBERSBURG YMCA

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