

CASE STUDY

Project

Single-Ply Roof Retrofit
LaSalle Catholic Middle School

Location

Cedar Rapids, Iowa

Contractor

FlexTech Roofing

Consultant

Triton Inc.

System

80 mil TRITOflex membrane
20 mil TRITOtherm ceramic coat

Project Size

53,000 square feet

Completion

July 2013

This 18-year old Hypalon white single-ply roof system had been causing the middle school water intrusion problems for the last few years as it began to fail due to punctures, brittleness, and many other problems.

The school had reached the original expected lifespan out of this white Hypalon single-ply roof system before it began to leak extensively and require constant maintenance and care. Knowing that it was time to have this middle school building re-roofed before the new school year, the school brought in Triton to analyze their current situation and present the options they could choose from.

There were lots of punctures in the existing membrane due to a variety of causes and the school was constantly having it patched. Algae and fungi had also eaten into the membrane causing pinholes. Some of the fasteners had started to protrude through the membrane due to settled insulation from moisture. Lastly, the membrane was very dirty, which negates its energy savings, and thin due to deterioration over time. Water was actually beginning to wick through the reinforcement scrim of the membrane.

Laying Out Options

Triton laid out the options available for the school and the costs associated with each. The most expensive option was tearing the whole roof off and installing new insulation and membrane. The second most expensive was to install another single-ply membrane on top of the existing, requiring a layer of insulation or cover board and drilling thousands of fasteners into the roof and creating more opportunities for water to migrate within the system. The third option was to remove only the current Hypalon membrane and replace with a new single-ply, but that would require drilling thousands of fasteners into their steel deck which already had thousands of holes. That roof would give them another 15-20 years of life and then need replaced again after the same failures occur.



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The final, and least expensive, option was to recover with the TRITOflex system directly over the Hypalon single-ply, avoiding thousands of fasteners with no seams and utilizing the existing membrane thickness to their advantage. In addition to that, a TRITOtherm top coat was recommended to repel ambient heat and also act as a sacrificial layer on top of the waterproofing membrane to create a roof that is sustainable for generations.

Cost-Effective, Quality Installation

The TRITOflex two-component rubberized membrane was installed in one coat with a spray application directly over the existing single-ply roof system to achieve a 60 mil/1.5mm seamless membrane. It was then top coated with two coats of TRITOtherm thermal insulating coating at 20 mils/0.5mm total to provide superior energy cost savings in the hot summers and also help prevent heat loss through the roof system while the school is heated during the cold Iowa winters. With an industry-leading FM-approved hail resistance classification and leading puncture resistance properties, the flexible TRITOflex membrane will protect this building from anything the elements, roof-top workers, or children may bring at it in the future. The TRITOflex recover system being environmentally safe with no VOC's, and no harmful or disruptive odors, proved to be the most cost-effective and prudent solution for the school.

The school can rest assured they will have no disruptions to their vital classroom environments due to a leaking roof and they now have a roof system that can be sustained for decades to come.