



SIKA AT WORK

MINNEAPOLIS CONVENTION CENTER

MINNEAPOLIS, MINNESOTA

DÉCOR ROOF SYSTEM USING 80 MIL Sarnafil®
G410 MEMBRANE IN CUSTOM COLOR OLIVE

Sarnafil

BUILDING TRUST



DÉCOR SYSTEM SAVES DRIPPING DOMES - AND \$8 MILLION

The Minneapolis Convention Center knew it was time to replace three out of the four copper domes on its roof when black gooey asphalt from the roof dropped onto a car at the Twin Cities Auto Show in 2012. While the copper domes, with their concentric diamond patterns, were iconic symbols to the city, they had been causing headaches from the day they were installed 23 years ago.

“The copper domes had an ice and water shield underneath them, and as the water shield became hot it would melt and drip, creating a void that allowed ice to back up and enter the system,” explained Terry Thone, senior consultant and president of Roof Spec, Inc. of St. Paul, the roofing consultants on the project.

Added Lane Carlson, facilities operation manager at the Minneapolis Convention Center, “One side of the dome would heat up from the sun while the other side remained cold. There was not a sufficient amount of flexing of the skin and copper panels in these freeze/thaw cycles.”

DÉCOR SAVES MILLIONS OF DOLLARS

After spending several hundred thousand dollars a year making short-term repairs to the roof, it was finally decided to replace three of the domes (the fourth dome, built in 2001, was not leaking). The City of Minneapolis and its residents wanted the new domes to mimic the old domes, and also match the remaining fourth dome. However, replacing the three domes with copper was estimated to cost \$12 million.

Roof Spec had another recommendation, however: the Décor Roofing System, which combines Sika Sarnafil's G410 thermoplastic single-ply roofing membrane with Décor profiles to give the appearance of a standing seam metal roof. It is one of the only roofing systems of this type that includes warranty coverage for the hot-air welded ribs that

give a roof the appearance of metal. Not only would Décor provide the look the city sought, but at an estimated cost of \$4 million, it would save \$8 million dollars.

“We have done a lot of Décor projects, including work with other copper domes on basilicas, and really like the system,” Thone remarked. “We also like that we could marry the Décor membrane with the PVC membrane on the flat portion of the roof with PVC coated metal, something we wouldn't be able to do with a copper roof.”

“The Sika representative understood our situation right away, and the need to have a custom color that would mimic the old roofs,” Carlson stated. “Since these domes are a landmark in Minneapolis, we had to be sure that we used the right solution, and that was the Décor system.”

DOMES CHALLENGES DAUNTING

One of the first challenges was finding the roofing contractor to do the installation. “The contractor had to meet the city's employment requirements that included a certain percentage of female and minority project workers,” Carlson said. “Most construction companies said they couldn't meet that goal.” One company that met those criteria was Central Roofing Company of Minneapolis. That would turn out to be one of the easiest aspects of the project.

“We faced a deadline of 125 days to remove the old copper and install the Décor system,” remarked Warren Stock, senior vice president at Central Roofing Company. “We had a crew of 60 people working six days a week, 10 to 12 hours a day.”

Keeping the crew safe was another concern. With a 12/12 pitch and

PROJECT

Minneapolis Convention Center
Minneapolis, Minnesota

OWNER

City of Minneapolis

ROOFING CONTRACTOR

Central Roofing Company
Minneapolis, Minnesota

ROOFING CONSULTANT

Roof Spec, Inc.
St. Paul, Minnesota

ROOFING SYSTEM

Sarnafil Décor Roof System using
60 mil G410 feltback membrane
in custom color olive

PROJECT SIZE

120,000 square feet

COMPLETED

November, 2012





the 70-foot center point height of the domes, tie-off protection was required 100 percent of the time, according to Stock.

Accessing the three, unconnected domes, which were in the middle of the roof and surrounded by flat roofs and solar panels, was not easy. "We had to use a Potane crane with multiple set-ups and a custom crafted conveyor system," Stock explained. "During this time, the convention center remained operational, and we often had to work around conventions and events and review which areas under the domes were being used. We had to take into account noise issues, trucking issues and safety issues."

The crew began work by tearing off the old copper, which was later recycled. Then two layers of ice and water shield were installed, followed by ¼ inch of gypsum board and the Décor membrane. "We had 24 panels of membrane for each row, ranging in size from 30 by 50 feet to 20 by 15 feet. The panels would narrow proportionally as we went up the dome," Stock stated. "In the end, we had 104 panels with 440 seams – all at an angle."

To mirror the old copper roof in size, shape, color and batten configuration, 13 miles of Décor ribs were used. The longer ribs were installed on site, and the shorter ones were fabricated and welded together in a company warehouse, then brought to the site and welded in place.

Despite all the challenges, Central Roofing Company was able to complete the job on time and on budget. "They were awesome to work with and exceeded expectations," Carlson remarked. It was this professionalism that earned Central Roofing Company second place in the Steep Slope Category of Sika Sarnafil's 2013 Project of the Year competition.

DOMES NO LONGER DOOMED

Today the domes are drip-free and looking great. "The three domes

are identical to the other dome and look fantastic," Thone said. "They also went through two of the worst winters we've had in recent memory with no problems."

"I'm very happy I don't have to answer leak calls anymore," Carlson stated. "In fact, I will absolutely go with the Décor system again when it comes time to replace the fourth dome."

Performance, appearance, and peace of mind – not bad for a roof that saved the city \$8 million.



MINNEAPOLIS CONVENTION CENTER



WHO WE ARE

The commercial roofing industry has relied on Sarnafil® brand thermoplastic single-ply membranes from Sika for more than 50 years to achieve sustainable roofing and waterproofing solutions. The company manufactures long-lasting membranes and systems, vapor retarders, insulation, fasteners, adhesives and proprietary hot-air seam welding equipment.

Sika is a specialty chemicals company with a leading position in the development and production of systems and products for bonding, sealing, damping, reinforcing and protecting in the building sector and the motor vehicle industry. Sika has subsidiaries in 84 countries, employs 16,000 people worldwide, and has more than 160 manufacturing facilities around the globe.

Our most current General Sales Conditions shall apply.

Please consult the Product Data Sheet prior to any use and processing.
ISO 14001: 2004-Compliant

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SIKA CORPORATION • ROOFING

100 Dan Road • Canton, MA 02021 • USA

Tel: 781-828-5400 • Fax: 781-828-5365

usa.sarnafil.sika.com

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