Dow performance silicones

DOWSIL™ 758 Silicone Weather Barrier Sealant helps solve new hospital's sealing challenge

CASE STUDY: KALEIDA HEALTH GLOBAL VASCULAR INSTITUTE

City and country

Buffalo, New York, USA

Product*

- DOWSIL™ 758 Silicone Weather Barrier Sealant
- DOWSIL™ 123 Silicone Sealant

Key participants

- **Architect** Cannon Design
- **Building owner** Kaleida Health
- **Curtainwall and field glazing contractor** CBO Glass Inc.
- **Dow distributor** CS Behler Inc.
- **Dow representative** Scott Waechter

*Prior to February 2018, products listed were branded as Dow Corning.

The project

The architects of the Kaleida Health Global Vascular Institute in Buffalo, N.Y., adopted state-of-the-art weather barrier technology to ensure that the new hospital will withstand the city's varying climate conditions. Finding a sealant for the critical waterproofing membrane on the outside of the building was a challenge, though. New DOWSIL™ 758 Silicone Weather Barrier Sealant proved to be the solution.

The Global Vascular Institute and Clinical Translational Research Center, located next to Buffalo General Hospital, will bring together Kaleida Health physicians and University at Buffalo (UB) researchers in a collaborative effort to deliver state-of-the-art clinical care, produce major breakthroughs on the causes and treatment of vascular disease, and spin off new biotechnology businesses and jobs.

When completed in late 2011, the 10-story Kaleida Health-UB facility (including InstituteBuffalo General's tower) will house nearly 600 patient beds; 30 operating rooms; 17 interventional labs for cardiac, vascular and neurological procedures; and state-of-the-art instrumentation.

And to protect all of this equipment and these important activities, only high performance building materials are being used in the construction of the institute.

Modern design requires advanced waterproof membrane technology

Located in Western New York on the shores of Lake Erie, Buffalo sees a full four seasons of climate conditions. That's why the architects chose to follow the rain screen principle for the exterior panel systems of the building. They recognized that in such a climate, water will eventually get behind exterior surfaces. Their approach, therefore, was to use large aluminum panels designed as a rain screen with water managed at the backup wall behind. The ultimate protective barrier for the building is a Blueskin SA waterproof membrane installed behind the panels.

50+ YEARS PROVEN PERFORMANCE

An ‘unsticky’ situation

The waterproof membrane comes in large rolls and is applied to the side of the building in overlapping layers, according to Jim Curry, senior project manager with contractor CBO Glass Inc. A sealant is required to permanently join the area where the overlap occurs. But there was a problem with the sealant recommended by the membrane supplier.

“Results of testing at an independent laboratory showed that the sealant we intended to use did not adhere as intended to the membrane and thus could not provide the performance and durability we required,” Curry said.

These results were not surprising, though. Blueskin SA is made of polyethylene, a surface to which most sealants do not adhere.

The silicone solution

To find an answer to this critical problem, Curry turned to Tom Casarsa at distributor CS Behler Inc.

“Tom has always been willing to do whatever it takes to help us solve problems, and this case was no exception,” Curry said. “He came through with [DOWSIL™] 758 Silicone Weather Barrier Sealant.”

Independent testing confirmed Casarsa’s recommendation, with DOWSIL™ 758 Silicone Weather Barrier Sealant providing excellent air and water penetration in a mockup of the Kaleida Health building. In fact, DOWSIL™ 758 Silicone Weather Barrier Sealant is one of only a very few sealants on the market that can adhere – unprimed – to polyethylene and give a long-term solution that does not break down over time.

And more applications

Because the institute is a multi-story building, the Blueskin SA membrane had to be cut out at some of the stack joints where high movement is anticipated. In these areas, DOWSIL™ 123 Silicone Seal was used to provide the greater flexibility needed while also acting as a water and moisture barrier. And DOWSIL™ 758 Silicone Weather Barrier Sealant once again was the sealant of choice to adhere the DOWSIL™ 123 Silicone Seal to the Blueskin SA membrane.

A reputation for performance

“We have used Dow products in the past, and they have always provided the performance we were looking for. And the company has an excellent reputation in the industry for high-quality products and great service and support,” said Curry. “That is why we chose [DOWSIL™] 123 Silicone Seal for the stack joints. And it is also why we were pleased to hear from Tom Casarsa about Dow’s solution to our membrane sealing problem. The Blueskin SA membrane is a specialized material, so it is really nice to see that Dow is willing to develop high-performance products for such niche applications.”

Completing the story

Construction of the main exterior envelope of the Kaleida Health Global Vascular Institute was completed in December 2010. Interior work will be finished later in 2011, with the Emergency Room opening on November 11. Only the final touches will remain at that point, and construction crews are expected to turn over the keys to the institute in February 2012. When they do, the new owners can be assured that the advanced technologies being used and developed inside the building are protected with equally advanced technologies on the outside.

For more information

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