



“The FOAM-LOK 2000 4G closed-cell spray foam system from Icynene-Lapolla has just been blowing away my expectations.”

— Eric Gladson
Owner – Integrity Plus Insulation, LLC

Closed-cell Spray Foam Featuring Solstice® LBA is a Cut Above for Lumber Mill

Lapolla FOAM-LOK™ 2000 4G Installed to Prevent Mill Stoppages Due to Freezing

THE OPPORTUNITY

Insulate Biewer Wisconsin Sawmill’s silos to prevent stored boiler fuel, consisting of sawdust and bark, from freezing during harsh winters. This fuel source must reliably flow from the silos to the boiler to keep the mill operational.

THE SOLUTION

For this challenging application, Integrity Plus Insulation was chosen to install two inches of closed-cell spray foam from Icynene-Lapolla formulated with Honeywell’s Solstice® Liquid Blowing Agent in Silo 2, with plans to spray Silo 1 in 2019.

The Right Insulation Choice - Top to Bottom

“Cold is everything.” That description from Ralph Moser, kilns supervisor at Biewer Wisconsin Sawmill, is at the heart of why closed-cell spray polyurethane foam (ccSPF) was installed inside a large silo to prevent boiler fuel stored inside from freezing. This sole fuel source, which consists of sawdust and bark, is typically moist and therefore susceptible to freezing inside the mill’s silos during winter. If frozen, the sawdust and bark is unable to flow freely down and out of the silos to the boiler, which can cause the mill to shut down.

Since the mill does not have gas back-up, it uses expensive torpedo heaters inside the silos to prevent freezing or, if necessary, to thaw the sawdust and bark. This approach is costly and inefficient. “This spray foam installation is huge for us,” said Moser. “After the foam is installed, I expect to see a reliable flow of fuel to the boiler, which will provide steadier boiler pressure.” He explained that the spray foam investment is well worth it. “The price of a heater is comparable to the cost of the whole insulation job. And if we install spray foam in our other silo, which is our plan, then it doubles the savings,” he said.

After trying some rigid sheet insulation methods in the past, Moser said they knew they had to use a product that would contour and fully adhere to the metal walls. Because spray foam is applied as a liquid, he likes how it expands and cures into a rigid foam that seals and strengthens the silo walls as well. According to Moser, Integrity Plus Insulation earned the project due to its responsiveness and proven capabilities.

Biewer Wisconsin Sawmill Project at a Glance

- Located in Prentice, Wis.
- Produces a wide variety of dimensional construction-grade lumber
- Silo 2 insulated with ccSPF (approximately 28 ft. tall and 35 ft. in diameter)
- Silo 1 is larger (ccSPF installation planned for 2019)
- Biewer operates 5 sawmills producing over half a billion board ft. annually



Adhesion to the metal silo wall was important, as well as the foam's ability to provide an air and moisture barrier.



Ramiro Garcia (L) and Kelly Pickering from Icynene-Lapolla provided onsite support during the application.

Integrity Plus Insulation – Flying High

Eric Gladson, owner of Integrity Plus Insulation, was excited to demonstrate the benefits of closed-cell spray foam at the lumber mill, which is located near his insulation business. “I’ve sprayed nothing but the Lapolla FOAM-LOK 2000 4G system manufactured by Icynene-Lapolla with Honeywell’s Solstice LBA for over two years because of how it performs,” said Gladson. “I’m loyal to it.” During the silo installation, he described how the system was performing. “It’s better than expected. It’s laying in nicely and we’re getting great yields and adhesion.” Additional benefits he mentioned include:

- Ease of spraying
- Reduced gun clogging
- Excellent foam consistency start to finish
- Minimal adjustments to temperature/settings
- Smoother surface finish

Spraying foam inside the silo posed unique challenges for the crew, particularly the need to maneuver around piping, many cross beams, and other obstructions. A lift allowed them to start spraying at the top of the silo (about 25 feet up) and work their way down. Gladson explained that after brushing off thick layers of dust on the structures, “Adhesion is still great. We’re sealing up every spot, even those that are very hard to reach, and the foam is performing flawlessly.”

Icynene-Lapolla – Ahead of the Curve

The first to launch a wall foam system using Solstice LBA, Icynene-Lapolla hasn’t looked back. Kelly Pickering, western regional supervisor of Icynene-Lapolla’s technical department, said Lapolla FOAM-LOK 2000 4G is perfectly suited for this complex and demanding application. “Not only will the spray foam prevent the material from freezing in the silos, it will also provide an air and vapor barrier that will reduce air leakage and condensation that can build up. Also, the strength of the foam will make the metal structure sturdier.”



The ccSPF application was challenging due to the silo's 28 ft. height and the many obstructions that had to be avoided while spraying from a lift.

Ramiro Garcia, Icynene-Lapolla's Midwest territory manager, echoed those advantages while emphasizing another important benefit of the FOAM-LOK 2000 4G system. "Because the system uses Honeywell's Solstice LBA, it is non-ozone-depleting and has a low global warming potential of one," he said. "So not only is FOAM-LOK 2000 4G user-friendly, it offers exceptional environmental benefits as well. Icynene-Lapolla was the first to commercialize a spray foam system containing Solstice LBA globally."

"We are excited about the ongoing success of Lapolla FOAM-LOK 2000 4G," said Mengya Li, Honeywell's global business manager for spray foam. "We are proud knowing that our blowing agent technology is making a positive difference."

Solstice LBA is based on hydrofluoro-olefin technology. Some of its features include:

- Ultra-low GWP potential of 1 (99.9% lower than the HFC blowing agents it replaces and equal to carbon dioxide)
- Non-ozone-depleting
- Nonflammable (ASTM E-681, EU A11)
- Listed under the U.S. EPA's Significant New Alternatives Policy (SNAP) program to replace ozone-depleting substances
- Listed on the TSCA inventory
- VOC-exempt per U.S. EPA
- Reliable supply from Honeywell

"The Lapolla FOAM-LOK 2000 4G with the Solstice blowing agent has helped differentiate the performance of closed-cell spray foam technology. It is the wave of the future."

— Kelly Pickering
Icynene-Lapolla

Built to Last

Aside from installing a cutting-edge system, Gladson recognizes that the service he provides to customers, as well as the support he receives from his system supplier, is essential for lasting success. “We get great service from Icynene-Lapolla. It’s both the material and the company that’s been great to me.”

Pickering sees a bright future ahead for FOAM-LOK 2000 4G. Contractors like its versatility across a wide range of residential, commercial, and unique specialty applications, such as the silo project. He said, “The Lapolla FOAM-LOK 2000 4G with the Solstice blowing agent has helped differentiate the performance of closed-cell spray foam technology. It is the wave of the future.”



The Integrity Plus Insulation crew - Jared Hartmann (L) and Eric Gladson

Contact Honeywell to Learn More

To learn more about the benefits of Solstice LBA in new construction or retrofits, call Honeywell at 1-800-631-8138 or visit www.honeywell-solsticelba.com

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