


# Smart Choices, Greater Payback

A SPRAY FOAM APPLICATION IN THE CHICAGO SUBURBS IS HIGHLIGHTED BY THE BENEFITS OF A CUTTING-EDGE, BLOWING AGENT TECHNOLOGY

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Changing regulations are catching up with the benefits of closed-cell spray foam. Benefits that Shawn and Ellen Malone, two homeowners hailing from the suburbs of Chicago, Illinois, were able to witness first-hand. By choosing closed-cell spray foam advanced technology, the resident's home achieved improved insulation performance and lower energy costs.

Their home is located in Somerset Farm By Grainger, a charming 55+, ranch-style condo community in Sycamore, Illinois located 55 miles northwest of Chicago that's characterized by "stairless living" where they are surrounded by beautiful corn fields. General Contractor Solid Construction Services helped the Malones understand the benefits of using a newly introduced closed-cell spray foam to insulate their home. Several homes in this community used fiberglass insulation, but Shawn and Ellen wanted to spend a little more money up front to get the pay back from lower energy bills every month for many years to come. Solid Construction relayed that costs are expected to be 40 percent lower with closed-cell spray foam over other insulation options.

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Solid Construction Services specializes in green building services and interior design. Brian Grainger, president of Solid Construction, has built over 400 homes in the DeKalb County area and is the exclusive builder of Somerset Farm By Grainger in Sycamore. Brian installs several different types of insulation ranging from fiberglass to spray foam. He understands the differences and the pros and cons to choosing SPF for homes and commercial buildings.

“Solid Construction prides itself in assisting residents in choosing Green home options and redecorating their homes to make the most out of the storage, natural light, and other features that the home contains,” says Brian. “Energy efficiency is not only important to save homeowners money but it is now required by law in certain areas. Building regulations are now requiring tighter homes and more environmentally friendly blowing agents.”

This was Solid Construction’s precise approach when tackling this project. They partnered with Natural Polymers to obtain Natural-Therm®, a newly formulated, closed-cell spray foam using Opteon™ 1100 foam blowing agent by Chemours. Using this leading technology available through Natural Polymers, Solid Construction can offer higher R-value (insulating performance) with an excellent environmental profile to their customers. Solid Construction then brought in spray foam contractor Green Leaf to tackle the application of the 1,700-square-foot home.

## A NEW TECHNOLOGY

Over the last several years, spray foam use has grown rapidly (>10 percent annually) and is increasingly becoming the ideal choice of commercial and residential builders. Why? In a sentence, changing regulations are requiring healthy air and minimal energy loss... and closed-cell spray foam is the solution. Building codes that require tighter and more energy efficient homes (measured by a lower number of air changes per hour), and regulations that require lower global warming potential (GWP) chemicals have caught up with the

benefits that closed cell-spray foam offers building owners. The more air changes per hour in a building or home, the more energy is lost; tighter homes not only deliver energy savings but also provide a quieter, healthier living environment and barrier for rodents and other unwanted creatures in your home. Simply put, it just works better.

This project is an excellent example of collaboration and partnership between a homeowner, a spray foam manufacturer, a builder, and a spray foam contractor. It starts with finding the right partners with the right products.

A successful spray foam formulation is not unlike a good cooking recipe. Ingredient compatibility is key to making a great product that delivers superior insulation performance. All foams are not created equally. Formulators are like an excellent chef, they know the difference between good foam and inferior foam. Natural Polymers’ chef is owner and CEO Ben Brown. Ben has been formulating foams for over 20 years and he is elated about his new technology spray foam made with the Opteon 1100 blowing agent.

“What makes Natural Polymers unique is our focus on innovation and products with low VOCs (volatile organic compounds). Our technology allows contractors to reduce the amount of insulation required by code in a wall cavity with our many product characteristics, such as high R-value per inch,” says Ben.

Natural Polymers developed a platform of technologies that delivers a greener insulation, utilizing Chemours low-GWP blowing agent. This blowing agent is used in closed-cell spray foam and has a GWP 99.8 percent lower than existing blowing agents. Ben adds, “There was a noticeable gap in the market with the choice of raw materials used to manufacture spray foam. We felt this was an area that needed to be addressed and became an early adopter of low-GWP technology. We branded our products Natural-Therm to emphasize the value we provide to the environment, contractor, and building developer.”

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An applicator applies spray foam using Opteon™ 1100 low GWP foam blowing agent in new home installation

The thermal stability of Opteon 1100 helps fill the gaps that exist today with other low-GWP alternatives. The blowing agent also has a superior shelf life and formulation flexibility to utilize various catalysts and additives for improved processing and greater insulation performance. The spray foam industry is going through a change as hydrofluorocarbons (HFCs) are being phased out by the U.S. Environmental Protection Agency (EPA) in high-pressure spray foam by January 1, 2020. Natural Polymers, however, is not waiting until 2020 to make this important change. They are working closely with builders like Solid Construction and contractors like Green Leaf—the SPF contractor of this project—to bring this spray foam to the market sooner.

#### THE DEVELOPMENT

About 24 months ago, Natural Polymers started to work with Chemours, formerly DuPont Performance chemicals, to test their blowing agent. Opteon 1100 met Natural Polymer's need for a non-flammable, high efficiency and low-GWP blowing agent for use in polyurethane foams. The blowing agent's excellent thermal

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conductivity and sprayability help Natural Polymers improve the performance of its foam insulation, while its low GWP enables them to support their customers in helping meet the upcoming regulatory driven conversions across North America.

“The performance and environmental benefits of the blowing agent made it an excellent choice when we were developing our new low-GWP spray foam insulation formulas,” says Ben. “The product's ease of application, dimensional

stability, and enhanced energy performance allowed for us to meet our goal of delivering high quality insulation that still meets the changing regulatory landscape.”

Ben notes that unique chemical structure of Opteon 1100 provides versatility that maximizes the range of customer formulations, especially in challenging weather conditions as seen in the Midwest market, which allows Natural Polymers to eliminate manufacturing a summer and winter formulation because Opteon 1100 has the flexibility to work in broader range of temperatures and remains extremely stable, thus retaining the insulation performance.

Joyce Wallace, NA Marketing Manager, Fluorochemicals says, “We are proud to partner with Natural Polymers and other spray foam manufacturers that will lead the industry towards high performance, low GWP blowing agents. Chemours works closely with formulators to optimize formulations to enhance performance. The unique characteristics and superior performance makes Opteon 1100 a perfect choice for spray foam manufacturers. Their product plays a significant role in the NA low-GWP spray foam insulation market.”

Chemours introduced its Opteon portfolio of products several years ago as part of its low-GWP product portfolio and remains committed to innovation, and the company continues to make significant investment to bring this product and other low-GWP products to market.

## EASE OF USE

Can the contractor tell the difference? Indeed, they can. Green Leaf’s Blendi Allkanjar specified that the spray foam had excellent and improved adhesion compared to existing technologies and other low-GWP formulations and superior sprayability, making it easy to use. The Green Leaf crew sprayed three inches of closed-cell in one pass at 120-125°F degrees with hose temperature 115°F degrees.

“The spray foam was great to use with minimal preparation required,” says Green Leaf’s Blendi

Allkanjar. “Time is money for contractors, so a blowing agent that presents attributes such as improved yield, a clog-free sprayer, smooth surfaces, and odorless foam really differentiates itself from other alternatives. This foam delivered higher yield along with the benefits to the home owner of higher R-values. Higher R-value per inch in wall cavities is good for the Midwest. It can save construction costs as well since you don’t need to use two-by-six studs to get the desired R-values. That kind of reliability is huge.”

Shawn and Ellen were so excited about this new technology that they were on-site to talk about the performance of their new home. Shawn says, “I have been an electrician for many years and being in the trade, I understand the difference a smart choice can make. I’ve learned that now more than ever, what’s behind the wall really matters. I can’t wait to stand next to my windows in the middle of a Chicago winter when the wind tunnels are in full gear and not feel the draft I feel in my current home. I am very excited about this insulation, we love that it is better for the environment, and we look forward to the energy savings and more comfortable living conditions.”



**A successful application complete**  
Pictured here (from left to right) Ben Brown, owner & CEO of Natural Polymers and Joyce Wallace, Chemours with the homeowners, Shawn and Ellen Malone

## » FOR MORE INFORMATION

about changing regulations or Opteon 1100 low-GWP blowing agent, please visit [www.opteon.com](http://www.opteon.com) or [www.naturalpolymersllc.com](http://www.naturalpolymersllc.com).

**Company disclosures:**  
*Solid Construction Services, Inc. (By Grainger) is a general contractor which specializes in roofing and plumbing. Located in DeKalb, IL, Solid Construction serves northern Illinois and has been in business since 1995. For more information, please visit [www.somersetfarmssystem.com/](http://www.somersetfarmssystem.com/)*

*Natural Polymers, LLC is an innovative polyurethane systems house located in West Chicago, IL. Dedicated to the development of high-quality Urethane Systems with low VOC signatures and an environmentally friendly raw material base. Natural Polymers, LLC products are third party tested meeting and often times exceeding the industry standards set forth. To learn more about our products and certifications, contact us at 888-563-3111*

*The Chemours Company is a global chemistry company with leading market positions in titanium technologies, fluoroproducts and chemical solutions, providing its customers with solutions in a wide range of industries with market-defining products, application expertise and chemistry-based innovations. For more information, contact us at 302-773-1000*