



“Our new SmartSPF® line of low GWP blowing agent insulation is just another step in our evolution as a more responsible company, which started long before NCFI received the EPA’s Montreal Protocol Award in 2004. Sustainability and responsibility are hardwired into our corporate DNA.”

— **Chip Holton, President, NCFI Polyurethanes**

# NCFI’s New Spray Foam Using Solstice® LBA Ideal for Complex Roofs

Expectations Were Exceeded During a Santa Fe Residence Retrofit

## THE CHALLENGE

Insulate the roof of a best-selling author’s primary residence and new addition, as well as a newly constructed guest house. Typical of the Southwest-style of construction, the insulation must seal around extensive parapets and equipment on the roof deck, such as light boxes, piping, and ductwork.

## THE SOLUTION

A new closed-cell spray foam roof system from NCFI Polyurethanes formulated with Honeywell’s Solstice® Liquid Blowing Agent (LBA) was installed by Southwest Spray Foam.

## Closed-Cell Spray Foam – A Top Choice in the Southwest

Santa Fe, New Mexico is renowned for its natural beauty. Residents enjoy an appreciation for nature that often carries over into home design. Many home exteriors are designed to blend into their surroundings, while interiors typically feature large windows and soaring ceilings with exposed wood beams. To showcase the finished wood on these vaulted ceilings, all of the wiring, plumbing and HVAC ductwork must be placed on the exterior roof deck. Comparatively, in a traditionally constructed home, these infrastructure materials are usually placed in an attic or space above the ceilings.

Given this Southwest construction style, it is not surprising that closed-cell spray polyurethane foam (ccSPF) is a preferred roofing solution, particularly for private residences. It offers builders the ability to insulate these homes from extreme temperatures, while providing a durable, water-tight seal around multiple rooftop penetrations that can prove difficult and costly to address with alternative roofing materials. Not only is ccSPF ideal for roofing, it is well-suited as wall insulation due to its unique ability to seamlessly contour around shapes and expand to fill cracks and crevices.

## CASE STUDY RESULTS

### Some benefits of Solstice® LBA include:

- Ultra-low global warming potential (GWP) of 1, which is 99.9% lower than the HFC blowing agents it replaces and equal to carbon dioxide
- Non-ozone depleting
- Nonflammable (ASTM E-681)
- 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

### Compared to HFC systems, additional benefits observed while applying NCFI's new system made with Solstice LBA included:

- Better reaction time so the foam "smoothed out faster"
- Foam is firmer and harder (handles rooftop foot traffic better)
- Standard processing conditions and equipment were used
- Excellent foam consistency from start to finish
- No increase in spray gun clogging or fouling
- A smoother surface



In the Southwest, SPF roof projects for many homes are complex since electrical boxes, wiring, pipes and ductwork are often placed on the roof deck.

### The Story – A Santa Fe Residence Retrofit

"We are very excited that NCFI has joined the list of premier companies that have adopted Solstice LBA in their spray foam formulations," said Laura Reinhard, global business manager for spray foam, at Honeywell. "They have done an outstanding job with the system. It sprayed really well today." Reinhard said that feedback has been extremely positive from systems houses that have transitioned from closed-cell foam formulated with hydrofluorocarbons (HFCs) to Solstice LBA, which is based on hydrofluoro-olefin (HFO) technology. "Generally, they are seeing superior performance over current HFC systems and are reporting higher yields, better thermal results and improved sprayability," said Reinhard.

Along with its ability to improve foam performance, another key driver for Solstice LBA adoption is the global regulatory movement to phase out HFC blowing agents. HFCs have a much higher global warming potential (GWP) than Solstice LBA. Southwest Spray Foam (SWSF), a leading contractor in New Mexico, worked closely with NCFI to ensure that the spray foam installation at this popular author's private residence went smoothly. "We are really excited that we'll be able to offer this new system," said Matt Segura, co-owner at SWSF. "It will be more energy efficient for our customers and of course, we are more conscious of the effects our products have on the environment so this delivers a great benefit. I think it will help us gain a lot more business in the future."

### The View from the Crew

Aaron Lewis, co-owner at SWSF, oversaw the roof installation. Lewis said, "In most cities, a typical job may have 3 or 4 penetrations on a section of roof. Our projects are different because everyone wants to see the finished wood on the inside. Therefore, everything, such as light boxes, piping and ductwork, is placed on top of the roof. It's not uncommon for us to have a 200 to 300 square foot area that has 30 to 40 penetrations on it. Closed-cell foam works very well because we can spray around these areas and get the correct drainage required."

Lewis added, "So far, my crew has been raving about the way the system sprays. We are very pleased with the properties we are seeing. The foam has a beautiful skin on it, the reaction time has been very good making it easier to apply, and the foam is extremely hard, which we really like."

# Quality Can't be Compromised

"We are working with NCFI to help them optimize their system and are very pleased with the feedback we've received on this installation," said Mary Bogdan, senior principal scientist, at Honeywell. She said part of this project's success can be attributed to working with a well-qualified SPF contractor and she encourages builders and homeowners to be selective. "Southwest Spray Foam has an excellent reputation when it comes to quality and safety," said Bogdan. "They ensure that the spray area is contained, the applicators are wearing appropriate protective equipment, and the work area is cordoned off should there be any over spray."

Shane Woods from Woods Design Builders, a premier Santa Fe builder, echoed Bogdan's remarks about the importance of working with an experienced contractor like SWSF. He also explained why ccSPF is his insulation of choice for this home and others. "We use spray foam on about 99% of our roofs," said Woods. "First, we like the insulating performance and second, it reduces maintenance issues."

## Solstice LBA – An Exciting New Chapter

Looking ahead, NCFI is continuing to fine tune its new roof system featuring Solstice LBA and is gearing up for commercial launch. "Our work on low GWP blowing agent foam systems is paying off, and will continue to pay off long into the future," said Butch Mackey, roofing product manager, at NCFI. "Contractors that use our new SmartSPF® foams say they enjoyed spraying them. They get higher yields and they spray better in a wider range of temperatures. They love them, so we love them."

For NCFI and Honeywell, Solstice LBA is the start of an exciting new chapter.



Applicators from Southwest Spray Foam were pleased with the performance of NCFI's new closed-cell foam formulated with Honeywell Solstice LBA.



CcSPF is a popular choice given its excellent durability, superior thermal performance and unique ability to contour around the many protrusions and penetrations that must be sealed on complex roofs.

**"So far, my crew has been raving about the way the system sprays."**

-Aaron Lewis, Co-owner, SWSF

## Contact Honeywell to Learn More

To learn more about the benefits  
of Solstice LBA in new residential  
construction or retrofits, call  
Honeywell at 1-800-631-8138 or visit  
[honeywell-solsticelba.com](http://honeywell-solsticelba.com).

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