

## Honeywell Solstice® Liquid Blowing Agent: An Insulation Retrofit From the Outside-In

*"We are clearly seeing an 8-10 percent increased value in both yield and thermal performance which, in turn, is very beneficial not only for the installer, but for the consumer."*

**-Doug Kramer, President and CEO, Lapolla Industries**

**The Challenge:** Provide an insulation solution to meet aggressive energy goals for a 2800 sq. ft. home, built in 1928 in West Lafayette, Ind. The home is being transformed into a net-zero energy, waste and water home, sponsored by Whirlpool Corporation and Purdue University.

**The Solution:** A new closed-cell spray polyurethane foam (ccSPF) system for wall insulation developed by Lapolla Industries, formulated with Honeywell Solstice® Liquid Blowing Agent (LBA).

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When Whirlpool Corporation embarked on their search for a supplier to provide world-class spray foam insulation for a sustainable living project near the campus of Purdue University, they knew exactly where to start.

"Whirlpool and Honeywell had already established an excellent working relationship when we sought to improve our refrigerator insulation," said Ron Voglewede, global sustainability lead at Whirlpool Corporation. "We had just completed the conversion of our Amana, Iowa refrigerator manufacturing plant to foam insulation formulated with Honeywell Solstice LBA, and we knew this product was also slated to be used in residential wall insulation."



The timing was perfect. Lapolla Industries, based in Houston, Texas, had just completed the final phases of testing on their new wall spray foam system, which included Solstice LBA. "One of the reasons we started work with Solstice LBA is the recent pressure in the industry to find climate-friendly products," said Doug Kramer, president and CEO, Lapolla Industries. "Lapolla wanted to be first in the market with a wall foam system that included Honeywell's new low-global-warming blowing agent."

### Closed-cell Spray Foam Insulation: An Easy Choice

Even with so many options for residential insulation available on the market today, the decision to use spray foam insulation for this project was an easy one for general contractor Grant Giese, president, Green Goose Homes.

"We have used spray foam in our homes for a number of years now. We use it largely to stop air infiltration and provide great R-value, and we're doing the same thing here," said Giese. "We're trying to bring this home from being an energy hog to net-zero, and the spray foam is going to play a huge part in that."

“Closed-cell spray foam insulation seals gaps, cracks and holes as it is applied, making it one of the most energy-efficient insulation products available today,” said Laura Reinhard, global business manager, Spray Foam for Honeywell. “Now that Solstice LBA is commercially available, it is exciting to have it be earmarked for sustainability projects such as this one at Purdue.”

## Unique Insulation Application Creates More Potential for Spray Foam Retrofits

For many, the thought of retrofitting a home’s insulation brings to mind a messy, disruptive process that involves removing the interior walls down to the studs, but Giese had a different process in mind.

“We primarily use ccSPF in new home construction, but a lot of people don’t realize how easy it is to retrofit,” said Giese.

“This home has all plaster and lath on the inside, which is nasty to work with and remove, and harder to repair and replace. So it made a lot more sense for us, with the siding in the state it was in, to just remove the siding and spray from the outside. It’s really turning out quite well.”

- Grant Giese, President, Green Goose Homes

## New Spray Foam Insulation Exceeds Contractor Expectations

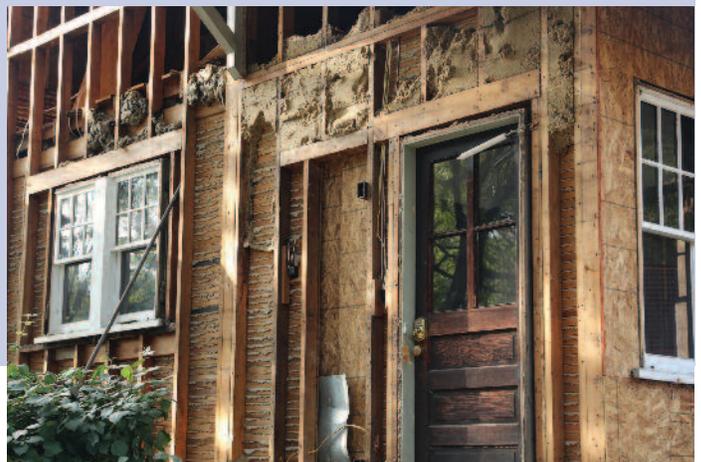
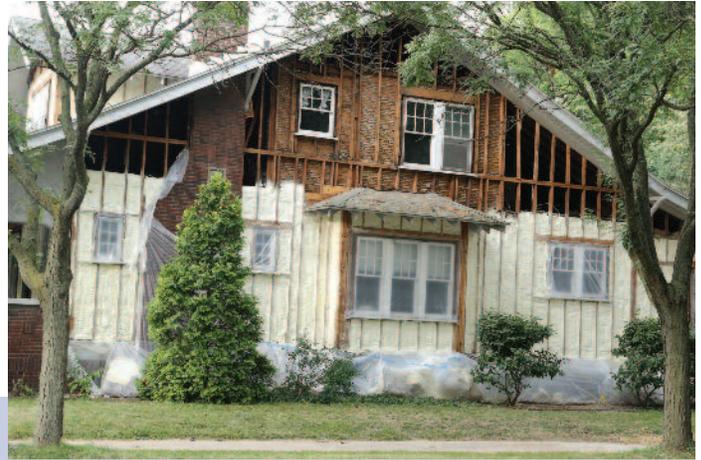
Lapolla’s new spray foam system received high marks from the spray foam installer as well.

“My expectations were exceeded. The yields were about 10 percent higher than we expected, which is fantastic,” said Brian Eustis, manager, ThermaSeal / Lakeside Insulation, an Installed Building Products Company. “The [application] guys liked it better because it rose later. The front end was a little slower, the back end was a little faster, so they could control it better. Overall, the product looked fantastic and the finished product looked great.”



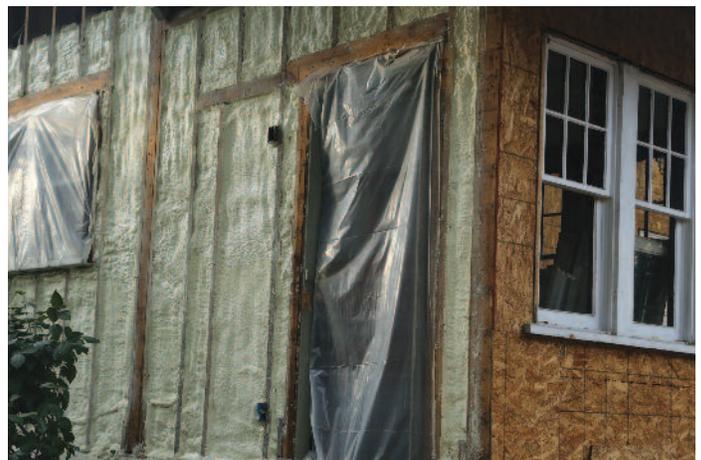
Before ▲

After ▼



Before ▲

After ▼





Mary Bogdan, senior principal scientist, Honeywell Fluorine Products, agreed. “The applicators did an excellent job of applying it. We had a broad temperature range from morning to afternoon, and it performed equivalently well across all the temperature conditions we experienced.”

### **Solstice LBA is Commercially Available**

“Honeywell started up its manufacturing facility for Solstice LBA in May 2014,” said Bogdan. She further stated that Solstice LBA is a key replacement for HFC-245fa and other HFC blowing agents because of these key advantages:

- Ultra-low global warming potential (GWP) of 1 (compared to a GWP of 858 for 245fa)
- A slightly lower molecular weight so less material can be used in a system
- A higher boiling point and lower vapor pressure, which improves handling and yields smoother foam surfaces
- Improved R-values

In addition, Solstice LBA is:

- Nonflammable
- Listed under the U.S. EPA’s Significant New Alternatives Policy (SNAP) program to replace ozone depleting substances
- Listed on the TSCA inventory
- Not a volatile organic compound (VOC) as determined by the U.S. EPA

### **Net-zero Energy, Waste and Water Home: What’s Next?**

With the deep energy retrofit complete, Whirlpool and Purdue are installing a world-class research laboratory in the home, which will provide continuous monitoring of all the products and systems that use the home’s energy, to provide valuable insights on technologies that enable sustainable living. To follow the project’s progress, visit:

[www.renewhouse.org](http://www.renewhouse.org)

### **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 [www.honeywell-blowingagents.com](http://www.honeywell-blowingagents.com)



Removing existing cellulose insulation that can slip down the stud cavity, reducing effectiveness over time



After spray foam insulation installation

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### **Honeywell Solstice Blowing Agents**

101 Columbia Road

Morristown, NJ 07962-1053

Phone: 1-800-631-8138

[www.honeywell-solstice.com](http://www.honeywell-solstice.com)



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