

## Solstice® Liquid Blowing Agent Receives Positive Review For Theater Roof Repairs

*"It's going to give us better energy efficiency over time. It's clearly better for the environment and allows for a smoother foam application. What more could we ask for?"*

**Tom Einhouse** – Vice-president, Facilities & Capital,  
PlayhouseSquare, Cleveland, Ohio

**The Challenge:** After Hurricane Sandy damaged two “built-up” roofs in Cleveland’s historic PlayhouseSquare performing arts center, new roofs were required.

**The Solution:** A closed-cell spray polyurethane foam (ccSPF) roofing system from West Development Group using low global warming potential Honeywell Solstice® Liquid Blowing Agent (LBA).

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“Cleveland Ohio’s PlayhouseSquare is the world’s largest theater restoration project and the 2nd largest performing arts center in the United States, eclipsed only by New York City’s Lincoln Center,” said Einhouse. It offers 20,000 seats and serves over one million guests per year. Built in the 1920s, the historic buildings that comprise PlayhouseSquare have survived destruction not once – but twice.

During the 1960s all but one of its original five venues were boarded up due to the rise in television and population movement to suburbia. In the 1970s, a grass-roots effort saved these historic theaters from demolition, restoring and reopening them one by one - with a goal of doing so in the most environmentally responsible manner possible. Spray polyurethane foam has played an important role throughout the restoration process.



In October 2012, Hurricane Sandy severely damaged two of the theater roofs. Fortunately, West Roofing, who has been servicing PlayhouseSquare’s roofing needs for many years, was ready to assist. “These buildings are priceless artifacts of Cleveland and we take our role very seriously,” said Dick West, president, West Roofing. “Although we did not install the roofs that were hurricane-damaged, we are going to replace them with our closed-cell spray polyurethane foam product blown with Honeywell’s new Solstice LBA and a high quality silicone coating.”

West believes that in order for a product to be sustainable, it must be:

- environmentally beneficial
- economically viable
- functionally equivalent

“Our tests with the new Solstice LBA have shown that it is functionally equivalent and as a matter of fact, we have found that it makes a better surface on the foam,” said West. “It is environmentally beneficial since it has a lower global warming potential (GWP) and a higher R-value. We believe it will be economically viable.”

Honeywell’s Mary Bogdan, senior principal scientist, said Solstice LBA is the latest advancement in blowing agent technology from Honeywell. It is **now commercially available**. She explains that foam

blowing agents have evolved over the years. “They started with CFCs and then transitioned to HCFCs, which reduced ozone depletion potential. We then transitioned to HFC-245fa, which has no ozone impact, but does have global warming potential,” said Bogdan. “The next transition for the construction community is to a non-ozone depleting, low global warming potential blowing agent – Solstice LBA. It provides a phenomenal environmental solution.”

Bogdan adds that Solstice LBA is an ideal replacement for HFC-245fa and other HFC blowing agents because it offers a number of key advantages including:

- A significantly lower GWP of 1 (compared to a GWP of 1030 for 245fa). This makes it a superior environmental substitute with a GWP that is two orders of magnitude (99.4%) lower than current HFCs used in the industry
- Better R-values
- A slightly lower molecular weight so you can use less material when making the system
- A higher boiling point and a lower vapor pressure which improves handling and yields smoother foam surfaces

In addition, Solstice LBA is:

- The world’s first 4th-generation blowing agent intended to replace HFCs, HCFCs and other less advanced alternatives
- A non-flammable liquid
- Approved by the U.S. Environmental Protection Agency under the Significant New Alternatives Policy (SNAP) to replace ozone depleting substances
- Listed under the TSCA inventory
- Not a volatile organic compound (VOC) as determined by the U.S. EPA



### How Did the Spray Foam System Perform?

On the day that the roofs were sprayed, Dick West observed, “We’re spraying outdoors in 50°F weather and it’s performing great. We are having no problems with the foam edge details, no problems with the spray pass lines and the blowing agent is doing everything it’s supposed to do.”

West added, “When we compete with other spray foam products or traditional insulations that have a very high GWP and a lower R-value, we can go in with Solstice LBA and be competitive and offer something good for the environment. It’s going to increase our ccSPF sales.”

Einhouse summed up his view of the roofing project, “We are very excited about Solstice LBA. Because of the great volume of foam roofs that we have in our center, it’s really nice to know that what we are using is going to give us better energy efficiency over time.”

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