

InsulStar® High Performance Insulation



By The Book: A New Hampshire library achieves silver LEED certification using InsulStar® closed cell insulation.

PROBLEM

- > Portsmouth (N.H.) wanted to build a "green" library
- > Needed the right products and design to meet LEED criteria



When planning for a new library in Portsmouth, New Hampshire began in 2002, those involved decided that it should be as "green" as possible. "They were going for some pretty high energy conservation ratings, plus they wanted a completely airtight barrier," says Jim Remick of Nickerson-Remick, the Portsmouth company contracted to install the insulation. The goal was to achieve LEED (Leadership in Energy and Environmental Design) certification from the U.S. Green Building Council. To meet this goal, the design and materials would have to meet the highest standards of energy efficiency, sustainability and environmental sensitivity.

SOLUTION

- > 20,000 sq. ft. of InsulStar used in the walls to achieve R-value of 14
- > InsulStar also provides airtight seal to improve air quality
- > Wide variety of other energy efficient and environmentally friendly features added



To achieve maximum energy efficiency, spray foam insulation was specified for the project from the start. Nickerson-Remick worked with the contractors, North Branch Construction of Concord, New Hampshire, to install over 20,000 sq. ft. of NCFI's InsulStar closed-cell insulation in the exterior walls of the building at a 2-inch thickness, providing an R-value of 14. Using spray foam also provided an airtight barrier, another goal of the library's planners. "We focused on cost-effective means to reduce energy cost and improve air quality," says Dan Hartey, a housing specialist in the city's Community Development Department and certified LEED-accredited professional.

In addition to InsulStar spray foam insulation, the library had a variety of other energy efficient and environmentally conscious features, including high efficiency heating, ventilation and electrical equipment, low-water toilets, and low-impact landscaping. The building also reused 75% of materials from the building that was torn down to make room for the new library and at least 20% of all the materials used in the construction were locally harvested or manufactured, gaining additional LEED points.

RESULTS

- > Portsmouth Library is first municipal building in New Hampshire to receive LEED certification
- > In the first 18 months of operation, energy savings have exceeded expectations



Going "by the book" to meet the LEED certification criteria paid off when the Portsmouth Library became the first municipal building in New Hampshire to receive LEED certification in August of 2007. The building was awarded silver LEED status, earning 36 points, and got high marks in the areas of energy conservation, recycling, and materials selection, among others. Library director Mary Ann List says the design and comfort of the library have made it a destination for Portsmouth residents. "We have people coming into the library for something other than necessarily reading a book," she says. "One of the things we're trying to do with the building – besides being a traditional library – we're trying to become a center for the community. I think that may be our most successful accomplishment."

And the energy savings produced by using InsulStar will continue to benefit the library for years to come. When the library first opened, energy models performed by an energy consulting firm indicated the building's heating, cooling and ventilation system would consume 32.5% less energy than a standard system. According to library director List, the actual results are even better. "[As of July, 2008], the building has been open for approximately 18 months and has gone through both heating and air conditioning seasons," she says. "The HVAC system has performed at greater than expected efficiencies (as predicted by the energy model), with the greatest efficiencies having been in the consumption of natural gas for heating."

Learn more at www.InsulStar.com
or by calling 1-866-NSULATE (1-866-678-5283)



About InsulStar®



InsulStar is a nominal 2.0 lb/cu ft high density, closed-cell spray polyurethane foam (SPF) from NCFI Polyurethanes. It is a two-part liquid system that is sprayed in place and quickly expands to fill all gaps and voids. It then cures to form a fully adhered, solid, monolithic insulation envelope.

- > 2.0 lb/cu ft high density, closed-cell spray polyurethane foam
- > R-value above R 6 per inch
- > Saves an estimated 40% on energy bills
- > Environmentally friendly
- > Forms seal that blocks air infiltration, noise, dust and pollen
- > Blended with anti-microbial to inhibit mold, mildew and bacterial growth
- > Adds structural rigidity

EFFICIENCY

InsulStar's R-value is R 6.4 per inch, compared to fiberglass batt at R 3.5. Its ability to stop air infiltration and eliminate convective looping saves the homeowner an estimated 40% on energy bills.

GREEN

In addition to its dramatic energy savings, InsulStar is formulated with renewable agricultural resources and uses a state-of-the-art, environmentally friendly blowing agent with zero Ozone Depletion Potential. NCFI Polyurethanes was awarded the 2004 Stratospheric Ozone Protection Award, an international award from the EPA for their work in developing environmentally friendly SPF systems.

COMFORT

The closed-cell, fully adhered structure of InsulStar forms an airtight seal that blocks air infiltration, noise pollution, dust and pollen. The low moisture vapor permeance eliminates the need for any additional vapor retarders. This low permeance works to control moisture vapor movement, thereby eliminating the moisture accumulation necessary to support mold growth. Additionally, InsulStar is blended with an anti-microbial to inhibit mold, mildew and bacterial growth.

STRUCTURAL RIGIDITY

InsulStar also adds structural rigidity to the building. In a test conducted by the National Association of Home Builders Research Center, it was concluded that a 2x4 wall sprayed with polyurethane foam insulation had two times the racking strength of a wall filled with fiberglass batt insulation.

ABOUT NCFI

From the carpet you walk on, to the warmth of your home in winter, to the sofa you and your family watch television on, NCFI Polyurethanes has been working hard since 1964 to make your world a more comfortable, secure, affordable place to be. You may not be aware of us, but our products touch millions of lives, and you can rest assured that we're constantly working to make life easier and better for you and your family.

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Winner of 2004 EPA award for protecting the Earth's ozone layer.

high performance
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NCFI
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A whole new comfort level, for you and for the world.