

InsulStar® High Performance Insulation:



InsulStar Gets An A+ on College Campus

NCFI Polyurethanes Spray Foam system's multi-functional capabilities solves design dilemma

PROBLEM

- > Three-story concrete and block building
- > No insulation or moisture barrier
- > Renovation will create cavity



When the Construction Management team at BJLAS, a strategic alliance between BJAC pa and Lord Aeck Sargent architecture firms in Raleigh, NC, looked over the planned renovation of Riddick Hall at North Carolina State University, they discovered a serious construction problem to solve. Riddick Hall, built in the early 1950's, was a four story building with layers of concrete block, brick and limestone panels forming the exterior walls. The masonry veneer had no insulation and nothing to stop moisture vapor diffusion. Now, the renovation, consisting of installing metal studs and interior wall board, would create a cavity that could set up conditions for condensation, mold growth and other moisture related problems. So BJLAS went searching for a solution.

SOLUTION

- > InsulStar could fill cavity and provide moisture barrier, air barrier and insulation
- > Renovations began fall, 2005
- > InsulStar used to seal holes and construction gaps
- > Construction completed in summer, 2007



After reading about spray polyurethane foam insulations, BJLAS contacted NCFI Polyurethanes. Here they were able to confirm what had been discovered in their initial research, that the NCFI Polyurethanes closed cell InsulStar could be sprayed directly to the interior of the masonry walls, creating a moisture vapor retarder. What BJLAS also discovered from talking with NCFI was they would also be getting a Water Barrier, an Air Barrier and the insulation for the exterior masonry wall with the single application of InsulStar spray-in-place polyurethane foam. With the metal studs off-set from the exterior wall, the InsulStar could be sprayed behind and around the studs to form a seamless, monolithic membrane providing all of the benefits that would take multiple products of other types to get the same results.



The application contract was awarded to the NCFI Gold Star applicator in Greensboro, NC. Their project manager had over 25 years experience in applying spray polyurethane foams and has worked with NCFI Polyurethanes on numerous projects over the recent past. The renovations began in late 2005 with the first InsulStar application in September, 2006. By coordinating with the General Contractor and other trades, all penetrations of the exterior for utilities were complete prior to the foam application. This way the InsulStar membrane would seal the holes and construction gaps, to provide the maximum performance of the wall assembly. The foam was sprayed to the exterior edges of the metal studs, forming a bond to the exterior walls, but leaving plenty of space in the stud cavity for finish work of the plumbing and electrical wiring. The construction continued through the fall, then winter of 2007, with construction completion in the summer of 2007.

RESULTS

- > InsulStar solved multiple building envelope problems
- > InsulStar was the best and most practical solution



The InsulStar application proved to be a fast and effective means to solve multiple building envelope problems. There were many angles, corners and joints in the construction that were simply coated with the layer of spray polyurethane foam, which formed a monolithic membrane. With no seams or joints to tape or seal, the Air and Moisture barrier was easily inspected as a complete blanket, to assure the University would have a building free of water vapor issues. Additionally, the closed cells of the InsulStar system provided a secondary water barrier for any wind driven rain that might breach the exterior veneer. When more than just insulation was required, the InsulStar system proved to be the best and most practical solution to a multi-faceted dilemma, a proven winner for the designer, the builder, and the owner.

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

InsulStar®
HIGH PERFORMANCE INSULATION

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 above 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 air 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 home. 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 1963 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
spray foam offers more



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