

Case Study

Homeowner Minimizes Energy Consumption with NCFI 2020 PLUS[®] Insulation System

Location: Roanoke, VA area

When John and Anne Bowling retired to the Roanoke, Virginia area from Memphis, Tennessee in 1997, they brought with them an insulation idea popular in Memphis: NCFI 2020 PLUS[®]



sprayed-in-place polyurethane foam. The Bowlings specified the spray foam system to insulate and reduce air infiltration in their new home.

“Spray foam insulation is very common in Memphis,” says John Bowling, “and our house plans were drawn up that way.” The Bowlings contacted North Carolina Foam Industries to recommend a spray foam applicator. “The installation went great. The applicators were very professional and finished the complete job in less than a day. I think it’s great, I didn’t know they could spray it that quick,” continues Bowling.

NCFI 2020 PLUS[®] spray applied polyurethane foam is sprayed on as a liquid which immediately foams and rises in place to fill and seal all the cracks and cre-

vasses in the stud wall cavity. In this manner, air leaks and air infiltration are virtually eliminated. The closed-cell foam also provides excellent insulation. “With the 2 ½-inch thickness within our walls we’re getting an R-value of over 16,” says Bowling.

NCFI spray-applied polyurethane foam has been in use since 1967. The combined features of full adhesion, sealing, strength, and insulation make it the material of choice for a variety of applications including insulating the fuel tanks on NASA’s space shuttles. NCFI 2020 PLUS[®] spray foam’s use in new residential construction has recently skyrocketed due to increasing consumer awareness.

“As I looked at it,” says Bowling, “our energy efficient house will pay for this, especially in this climate with its strong winds. It’ll keep our energy bills low.”

And indeed it has. The Bowling’s home is a 2,240 square-foot ranch heated with liquid propane gas. The low fuel consumption of the Bowling home recently attracted the attention of the Highland Propane Company, the local propane supplier. Between August 2000 and July 2001, the Highland Propane Company delivered 321 gallons of propane to the Bowling house.

For comparison, gas deliveries to ten similar homes, in the

Roanoke area, insulated with conventional materials were examined. After adjustments for appliance differences, the gas deliveries var-



Application of NCFI 2020 PLUS to stud wall cavity.

ied between 456 gallons and 1230 gallons and averaged 769 gallons for the same one-year period.

Based on this comparison, the Bowlings are using 42% of the propane used by their neighbors.

The actual savings and the payback period depend, of course, on the price the Bowlings pay for propane. The price of propane varies from season to season and year to year. Table 1 illustrates the an-

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TABLE 1
Estimated Savings and
Payback Periods

Cost of Propane (\$ per gal.)	Estimated Annual Savings	Estimated Payback Period (years)
1.20	\$ 537.60	2.8
1.40	\$ 627.20	2.4
1.60	\$ 716.80	2.1
1.80	\$ 806.40	1.9
2.00	\$ 896.00	1.7

nual savings and the payback period the Bowlings should expect based on various prices for propane. (The payback period is based on an estimate that the spray foam insulation cost \$1,500 more than conventional insulation would have cost.)

In addition to high R-value, NCFI 2020 PLUS® spray foam insulation is an extremely efficient insulation because it is:

- Closed cell: Air cannot flow through the insulation
- Fully adhered: Air cannot bypass the insulation.

While NCFI 2020 PLUS® spray foam insulation has a very high R-value, R-value is not the only factor affecting insulation efficiency. Homes insulated with NCFI 2020 PLUS® spray foam insulation will consistently outperform homes insulated with glass fiber batts, even with equal R-value in the walls. The reason is air flow. When the wind blows, the thermal efficiency of glass fiber batts plummets. Costly house wraps, with their

seams and imperfections, cannot compensate for this loss in efficiency.

With NCFI 2020 PLUS® spray foam insulation, high thermal efficiency is maintained, regardless of the weather, and house wraps are not needed.

Conserving energy reduces fossil fuel consumption and the attendant pollution. Building your home to be comfortable for your family and friendly to the environment will actually pay for itself and save you money as long as you live in your house.



Using products with the Energy Star® label can save energy. Saving energy reduces air pollution and lowers utility bills. As an Energy Star Partner, NCFI has determined that this product can significantly contribute to meeting the Energy Star guidelines for energy efficiency.



NCFI polyurethane foam insulates the space shuttle's fuel tank.

This analysis simply compares one homeowner's experience with other in the same area. The energy savings illustrated here may or may not be realized in other cases. Energy consumption is influenced by many factors other than insulation and air infiltration.

WHEN JUST INSULATION ISN'T ENOUGH®



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