

GREEN TECH THE SERIES COLUMN FOR SEPTEMBER 9, 2015

HEADLINE: SPRAY FOAM IS A PACKAGE: PRODUCT & INSTALLER

This is the third in a series on the insulation package done on the “Circa 1894 Spa” that we are just finishing. If you have been following this column, you will know that I’ve built an “addition” that is close to a small home in size, 860 sq. ft., using some of the international guidelines for a passive home assembly. The frame was assembled using the advanced frame methods; the insulation system we selected was a complete 2 lb. close cell spray foam envelope. This was done to provide the most effective insulation value per inch of insulation, an unbroken foam envelope, but also to for the added benefit of a degree of structural integrity to the overall assembly.

Some time ago I did extensive research on closed and open cell spray foam to find out the benefits and issues with what was, at that time, a rapidly growing insulation method. While the insulation value was not questioned, the effects of this method was; specifically the blowing agents that were used. They contained hydroflourcarbons (HFC’s), a suspension agent that was known to have very high global warming issues, almost 1430 times that of carbon dioxide, for example. This fact put most green builders off using closed cell spray foam. Open cell uses water and this was not an issue for this type of foam. Some contractors used a thin layer of closed cell spray foam for the air barrier value and then added conventional insulation batts.

The other issue is the small expanded droplets of foam that end up in the air. Unless everything is covered these droplets get onto everything. I learned this while taking pictures for this series with Jeff from Kingston Spray Foam. The camera lens had to be cleaned, repeatedly. Before the initial application everything, including the doors and windows were covered with a thin plastic sheet that could easily be taken down and then disposed of correctly. Everything was then taped at the seams. The only people allowed in the spray application area were the members of the spray foam crew. This was not only for safety, but because of the reduced air quality that happens during the spray application. It was clear that there was no other answer in regard to the droplets; site preparation is the only answer.

While doing my research, this left me with a dilemma. I wanted the value of spray foam, but not the environmental issues. This is where Jeff and his crew came into the picture, along with their particular spray foam “Polarfoam PF-7300-0 Soya.” This product is made from recycled plastics and vegetable oil, using a

zero ozone depletion substance that removes the issue with HFC's. Polarfoam exceeds the requirements of a type III air barrier, as proposed by the National Research Council of Canada. The long term minimum insulating value is R-6 per inch of applied material. During my research, I had looked at other spray foam manufacturers, but then decided to go with "Polarfoam" for the environmental benefits and proven quality of the material.

Having decided to use the spray foam, when we built the spa, we attached 1" thick rigid foam strips to the 2x4 wall studs, before Jeff came to fill the cavity. With the insulation value of the rigid foam board on the exterior of the wall, we are well over R-30 on the walls. The ceiling of the spa has over 8 inches of foam, making it close to R50. Once Jeff finished the application, we noticed a slight odor for a few days. Once the wood panelling that covers the interior was installed, the odor was no longer noticeable.

Like any successful installation, the applicator can "make or break" the end results and stories of sloppy work, sagging foam and poor cure time, abound, as does cases of improperly mixed material, which causes shrinkage and separation from the wood frame, completely eliminating the air barrier value. Inattention to the correct ratio of foam can also cause a long list of problems down the road. As well, spraying before the material is at the correct temperature is problematic. It's a long list of issues that can all be directed back to the installer and their lack of experience, lack of care and, for that matter, simply poor workmanship.

Spray foam is a complete package; the right material and a competent installer. In the first week of this series we looked into the standards that CUFCA (Canadian Urethane Foam Contractors Assn) demand from their members. Each and every job has to be reported and documented; any corners cut can result in immediate removal from the association. All of the factors, with respect to material preparation and application are on the daily work sheet that CUFCA members must complete. I have seen dozens of spray foam applications over the past few years and have come to realize that, while there are competitors in this business, the installers who use Polarfoam appear to have the edge and, in Kingston and area, Jeff Kleinlagel, owner of Kingston Spray Foam is head and shoulders above his competition. As noted, it's a package; the right foam and the right installer and I can attest to the quality of workmanship on the three projects that Jeff has done for us.

To take a sentence from the folks at Polarfoam, "Polarfoam PF-7300-0 Soya is one of the highest performance air barrier materials on the market.....a key element in the air barrier system that meets the objectives of the National

Building Code.” We wish to express our appreciation to Jeff and Dave for yet another excellent spray foam application. Should we ever have the need, we would not hesitate to use their services again.

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