

You Made the Right Decision

"You made the right decision". That's what the roofer said to me today as I told him my story of dense packing and hot roofs, as he climbed to the second story to inspect the asphalt shingles. "That's the best decision for Capes. I have seen many beautiful, larger, newer houses insulated with foam and owners battling fumes and when I am called to repair their roofs. You made the right decision, especially for a Cape". I knew that I had made the right decision for this 1938 Cape with its wood plank roof and walls, cedar shingles and fieldstone foundation and it was nice to hear from a professional who sees all kinds of roofs and houses and all kinds of insulation in his daily work.

When I bought this old house 23 years ago, I came to understand it was insulated and a little drafty, but I would soon learn what those picturesque icicles hanging off my snow-covered roof meant. They weren't just artful, nostalgic symbols of a Cape house and a New England winter, there was science going on there. There was warming and cooling and melting and freezing occurring under that snow. Ice dams were forming like a glacier on my roof and the melting of this rooftop glacier would flow into my house as the temperatures rose, regardless of the best ice and water shield membrane and new shingles. The melt, the leaks and the damages to ceilings and walls would take their toll on me and my budget every spring and the storms of winter of 2013 would finally tip me over. I knew had to make a change and prevent these glacial formations or I would spend my life repairing and repainting the ceilings and walls.

And so, I found myself studying the science of ice dams and their prevention, insulation techniques and products like cellulose and foam. I would be drawn back to my former work as a chemical engineer in membrane technology, researching a new membrane technology by Intello for dense packed cellulose hot roofs. It was all very fascinating and there was hope as I delved into the world of membranes and cellulose.

Why chose cellulose? After all, I am a chemical engineer, why not chemistry. "We bring good things to life. Why not foam? It was a consideration. It looks attractive, appears to have a simple application, seals everything, but further research brought up concerns. It needs to be perfectly mixed and applied, professionally. If it doesn't work out, it can be a disaster, emitting toxic fumes to the point of having to remove it all and perhaps even your roof. The cost is higher and the risk to your health is even higher. That was important to me. I have worked for the past 35 years as an emergency physician, treating a wide range of illnesses, including asthma, lung disease and allergies. I am mindful of the environment and its impact on health. I am mindful of the air that my children breathe, the food they eat and the house they live in. I was seeking a system that would provide a clean, healthy way to insulate my 80-year-old house that was free of chemical products. I came to the conclusion, in 2016, that the healthiest decision would be to use dense pack cellulose. Insulating using the hot roof technology and Intello membrane would best meet my goals. It worked.

It worked then and it is still working, four years later. Moisture readings of the roof and dense pack cellulose, by NatureTech Engineering in September 2020, confirmed that the technology has lived up to its' promise. The roof and dense pack remain dry. The moisture has not accumulated, and the hot roof application continues to work. While local boards are becoming familiar with the technology and building codes changes are in progress, dense pack cellulose, hot roof technology is being used across the state in many applications and on many frontiers. It is one of the best, greenest and cleanest technologies available for energy conservation in heating and cooling.

It's a cold winter night now and I am snug in my warm, healthy house. The only odors are the ones I choose, the smell of food, a fire in the fireplace and a scented candle. And I'm looking forward to the second half of the project to insulate an older addition and dormer and to PEARL certification of my house in the future.

Many thanks to Chris Alphen and his team at Dolphin Insulation for the great work they do in energy conservation, one house at a time.

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