Damn those ice dams!

Fact: New England winters can be cruel. Especially the very cold and snowy ones when ice dams form and cause melt water to leak through our roofs and ceilings, damaging our homes' interior. Who really wants to climb up and shovel the roof when your back is already broken from clearing the walks and driveway? Talk about adding insult to injury!

Fiction: Roofs only leak when they are in bad shape and need repair or replacement. Not true. What? Why would a perfectly good roof leak, you might ask. If the answer is unclear, then you're not alone. Many contractors would offer a solution that is based on a misunderstanding of the problem.

Shoveling the snow off is an obvious remedy. Getting it done safely is key however, as falling from the roof or putting the ladder through a window could cause even more trouble. (It's actually not the fall that hurts, but the sudden stop when you hit the Earth.)

Ice dams form when heat escaping from the home warms the roof and melts the snow. The melt water trickles down the roof until it reaches the cold eave, where it refreezes. After some time, the ice at the eaves gets thicker, forming an ice dam. Water backs up behind the ice dam and eventually gets under the roof shingles, where it is free to leak through the attic and begin to damage ceilings, walls and floors. Ugh.

Possible solutions include:

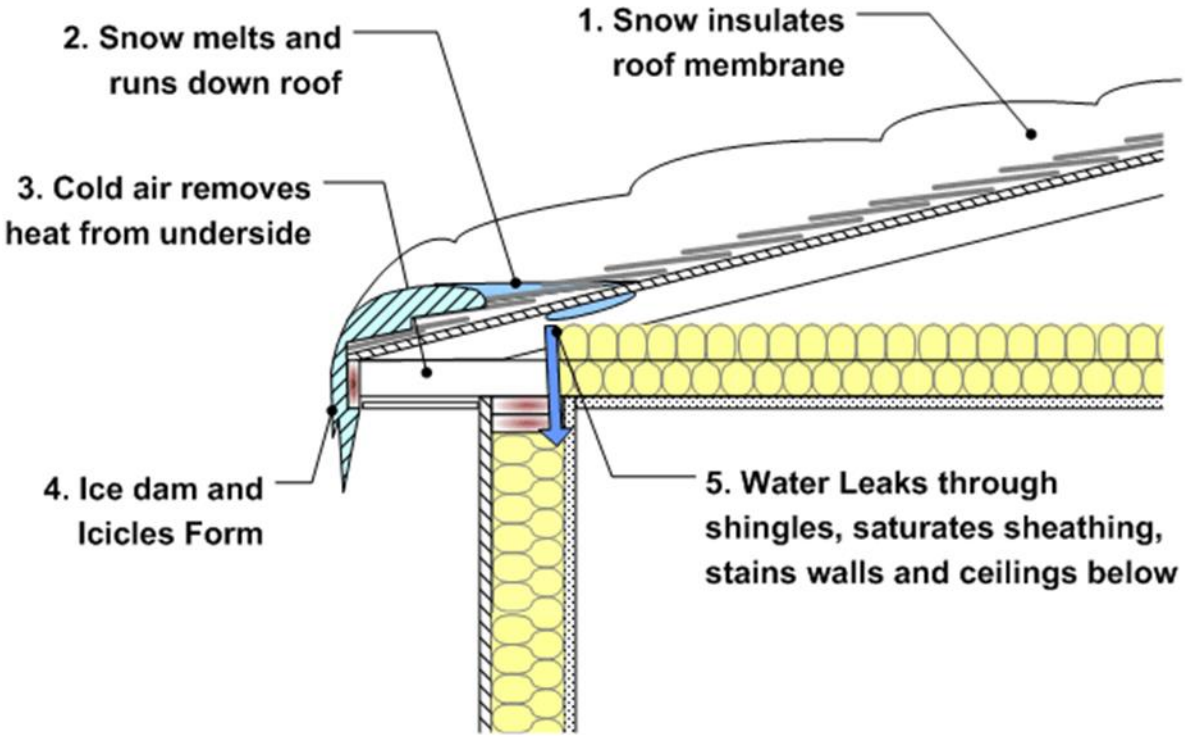
1. Installing a rubberized membrane under the roofing.
2. Improving ventilation between the top of the insulation and the roof sheathing.
3. Adding more ceiling insulation.
4. Sealing the air leaks between the warm interior and the attic or vaulted ceiling.

So, what's a poor homeowner to do?

It's not Rocket Science, it's Building Science!

While the first two solutions are only treating the symptoms, the last two can reduce or eliminate the problem altogether. Qualified professionals, such as Weatherization Contractors, Energy Auditors and HERS Raters can diagnose and treat the root causes of ice dams and other building maladies. Trained in the principles of Building Science, such professionals receive many phone calls during cold, snowy winters from homeowners who are ready to stop wasting money on misguided roof repairs and shoveling injuries.

Using specialized equipment such as a "Blower Door" and Infrared Imager, a residential energy professional can pinpoint issues that cause ice dams and other moisture related problems including mold, mildew, and rot, as well as seasonal discomfort. With this information, a targeted work scope can be developed to guide steps for correcting the problems at their source.



The Attic- a Scary Place

Ok, it's true. The attic can be a scary, dusty, hot, cold and generally uninviting part of your home. Fiberglass insulation is not sexy. It's itchy and sometimes covered with droppings of unidentified creatures. But flip it over and it tells a story. The underside of a fiberglass batt often shows a pattern similar to the surface on which it rests. Dark greyish marks are created by dust that has been filtered out of the warm air leaking into the attic from your interior below! Maybe it should be called "filterglass"…

Sealing these air leaks is the first priority in preventing ice dams. Air can leak into attics through recessed lighting cans, wiring, plumbing, fans, vents, wall frame top plates, attic hatches and chimney chases, to name a few.

Adding insulation can help once air sealing is complete. Check your local Energy Code requirements for R-values.

Improving attic ventilation is the third step after air sealing and adding insulation. This may be necessary but needs to be done carefully so as to prevent making the problem worse.

Roof membranes are the ultimate band-aid for ice dam issues. As a last resort, they will not prevent the formation of ice dams, but can limit the damage caused by leaks when they do form.

How to find a Building Scientist?

Qualified professionals may be found through the following links:

http://www.resnet.us/directory/search

http://www.repa-nh.org/REPA_Consumer_Guide.asp

About the author:

Steve Weglarz, Jr. is a HERS Rater at Advanced Building Analysis, LLC. His other certifications include the Building Performance Institute's Building Analyst and Thermographer level I from FLIR's Infrared Training Center. He is a full member of the Residential Energy Performance Association of NH (www.repa-nh.org) and a volunteer member of the Durham Energy Committee.

In his free time Steve trains and competes as a member of the US Telemark Ski Team and tends the family oyster farm in Great Bay, depending on the season. He lives with his wife, Tess and their 4 children in Durham, the first town in New Hampshire to adopt the 2012 International Energy Conservation Code.

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