TH Energy Consulting
Quality and Detailed Audits & Evaluations

Winter Roofs and Ice Damming – Signs of Heat Loss

Do you have a lot icicles hanging from your roof?

It has been quite a winter with large amounts of snow falling since the beginning of December. With a snowy early start to winter, we see a lot of roofs with ice damming and icicles draping down from gutters. Some icicles may form because the sun does radiate onto the roof shingles, melting the snow and the natural draining of water off of the roof occurs. As little as one or two inches of snow accumulation on the roof with freezing temperatures can allow for ice dams to form. Look around at our homes and compare buildings that have a lot of ice damming or icicle issues and those that do not. A properly ventilated and insulated roof system will have snow on it but no signs of ice damming or icicles. Why? The roof is cold. While heating our homes during the winter, heat naturally rises within and wants to cool to the outside air which is at a lower temperature. The heated air will find any gap, hole or pathway and create an escape to the outside into the attic or exterior walls. Heated air that escapes our home heats the roof sheeting and causes the snow to melt. Melted snow travels down into gutters or the bottom edge of the roof or roof eaves then cools off and forms ice. The problem compounds as more ice builds up or "dams up" and wants to get under the roof shingles and then water can potentially leak into the house. Roof damage can occur and even interior and exterior walls can be affected by this problem.

How does heat get into my attic? Several pathways can lead into the attic which can increase the home's interior air leakage. Anything that penetrates the attic can cause potential air pathways. Bathroom and range fans that just vent into attic space can cause the ice damming problem too. What about ice dam roof material? It helps prevent damage to the roofing materials from ice damming but does not prevent the ice from forming. Heat loss is the ice dam culprit! If you are helping reduce the snow and ice load with a roof rake – be careful not to damage the roofing shingles or membrane. A few years ago the snow on flat roof at the office was casually shoveled off. The next spring there were roof leaks because holes were punctured in the membrane. If you are not sure how to clear the snow from your roof and your roof may be difficult to reach, contact a roofing professional for help. You can get your snow on the roof removed safely and also

prevent possible roofing damage. What about roof ventilation? The roofs on our homes and buildings need to properly vent any heat buildup in attic spaces. A properly vented roof will slowly and evenly dissipate any heat by natural ventilation. Soffit vents that protrude into the attic, roof caps vents and ridge vents all contribute to good roof ventilation. When high heat loss into the attic results from inadequate insulation or when high air leakage is present, our roofs cannot naturally ventilate and dissipate escaping heat. How can I fix the problem? A good opportunity to find the air pathways and improve insulation is when you replace your roof or doing a remodeling project. Your home can also be tested for heat loss without re-roofing or remodeling. The key is in finding air pathways, proper sealing and insulation for the roof system. A Home Performance assessment can test for air infiltration into the attic, walls and other areas of your home. Diagnosing ice damming problems include finding air pathways, evaluating insulation and attic venting. Recommendations are then made for cost effective solutions to remedy the problems. Just adding more insulation may not solve ice damming problems. A whole house approach will make your home more comfortable, durable and energy efficient.

I am also available as a local southeast Wisconsin Energy Star Homes® and a Home Performance Energy Star® consultant to answer any questions you may have about ice damming problems on your home.

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