



Damaging Ice Dams

The extended periods of sub-freezing temperatures, and the above normal snow fall for the area, have created the perfect conditions for the formation of an ice dam on your roof. What causes an ice dam? What types of damage can an ice dam inflict on my home? What is the best prevention?

An ice dam is formed on a roof when ice builds up along the very bottom edge of the roof slope. Typically, this is evidenced by a raised area of ice and or compacted snow at the roof edge, and is generally accompanied by a collection of icicles hanging from the gutters or drip edge. The most common cause for an ice dam is poor, blocked, or insufficient ventilation in the attic space. Ventilation in an attic is useful in the summertime to alleviate the hot “pillow” of air overhead and to thereby reduce cooling costs. During the winter heating season, ventilation is necessary to maintain the temperature on the interior of the attic space as close to the outdoor ambient temperature as possible. By so doing, the snow and ice cover on the roof will melt evenly, and flow off naturally by means of the gravity gutters and downspouts. If a house has poor insulation, or if the ventilation is blocked, rising heat escaping from the living space will cause snow and ice to melt at a point just above the exterior walls of the house. As the resulting water flows to the edge of the roof, it passes onto the roof overhang, which is cooler, and refreezes, forming the ice dam. As more water is generated by melting above, it too collects above the ice dam, refreezes, and increases the height and width of the dam.

Ice dams can causes several types of damage, depending on the type of roofing material present. A truly waterproof roof, such as a standing seam metal roof, or a rubber membrane is best able to resist water infiltration created by an ice dam. Shingle roofs are highly susceptible to water infiltration as water ponds behind the dam and backs up underneath of the shingle layers. In either case, an ice dam may still cause damage by displacing the gutters, and possibly separating the fascia from the main structure.

Prevention is the key to minimizing the potential for damaging ice dam formation. Properly open ventilated soffits and ridge vents are the best insurance. From the inside of your attic, you should be able to see daylight through your soffit vents. If these are blocked by insulation, it should be pulled back to the top of the exterior wall. However, if ventilation is not possible, commercially available heating elements for the roof overhang are another option.

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