



Ice damming occurs when the heat of your attic (heater, furnace, fireplace) warms the snow accumulation on your roof to melt. As the snow melts and the water runs down the roof, it accumulates under each shingle tab. As long as the snow melt is over a heated area, it will remain melted.

Herein is the problem. The lowest/bottom portion of your roof (last 2'-3' over the eave) is NOT heated.

As the snow melts, runs down and accumulates under shingle tabs it reaches the unheated area of the roof. The water runs under those shingle tabs, refreezes and begins to form a dam. As more snow melt continues to run down, accumulate and refreeze under those shingle tabs, the dam gets bigger.

The "damming" that occurs pulls shingle seals apart and pushes ice (under your shingles) up the roof. The ice re-enters the heated area of your roof and melts (unimpeded) into your attic.

The melt will seep through your decking, onto your insulation and into your drywall. The water will not always damage sheetrock but most inevitably it will reduce the R-value of your insulation, trap moisture in your attic and possibly cause health issues.

To reduce the risk of ice damming, there should be a layer of ice and water shield/barrier adhered prior to the installation of any shingles. That layer of ice and water should extend 12"-16" above the interior portion of the exterior walls of the home.

Ice and water shield/barrier comes in a self adhesive roll. The adhesive is protected by a peel-off film backing. This film is simply pulled off the back as it is rolled onto the roof. The barrier must be adhered directly to the bare deck surface of the roof. All felt paper must be removed from the area to be treated with the barrier.

There are certain precautions to reduce the risk of ice damming when a roof is not being replaced. Where it is always important to keep your gutters clear of leaves and debris ([link to roof cleaning page](#)), it is vitally important that you do so during winter. Clogged gutters and downspouts will ice up and cause major problems.

It is as vital to keep your valleys clear of debris. Ice can form under laps and valley metal breaks/seams. These breaks or seams in roof component will allow ice and water to penetrate the substrate.

Chemical deicers should never be used on roofs since they can discolor shingles and corrode drains, and chopping at ice can damage roof shingles or siding. Using a long-handled roof rake can help to reduce the volume of snow. However, this is only recommended for low-pitched roofs, and can be dangerous to attempt on a two-story building.

Of all procedure or prevention of ice damming nothing is as important as proper insulation ([link to the insulation page](#)). The less warm air escapes your home into your attic, the less chance the snow will melt. Keeping your attic (especially eave areas without blocking soffit vents) well insulated helps retain heat from your HVAC unit. The less ice you melt off the roof, the less chance of ice dams forming.

Be careful to keep a balanced insulation/ventilation ratio. You never want to seal off your attic from ventilation. Moisture will form and become trapped in your attic. The more moisture the less R-value. The less R-value the more loss of insulation properties.

How ice dams form

- 1** Indoor heating rises through the ceiling into the attic and warms the roof surface.
- 2** Snow on the heated part of the roof melts and flows down until it reaches that part of the roof that is below 32 degrees. Water freezes into an ice dam.
- 3** The dam grows as it is fed by melting snow above, but water held by the dam accumulates and stays in liquid form.
- 4** Eventually, the water finds cracks in the roof covering and flows into the attic where it can then seep through the ceiling and interior walls.

**TEMPERATURE
ABOVE 32 DEGREES**

1



SNOW

2

DAMMED
WATER




4

**TEMPERATURE
BELOW 32 DEGREES**

3

ICE DAM

An ice dam might form when...

-  There is snow on the roof.
-  Average outside temperature is below 32 degrees.
-  Roof surface temperature is above 32 degrees at its higher end and below 32 degrees at its lower end.

ICICLES

