

Ice Damming – Why It Happens and What To Do

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Home Inspection Services

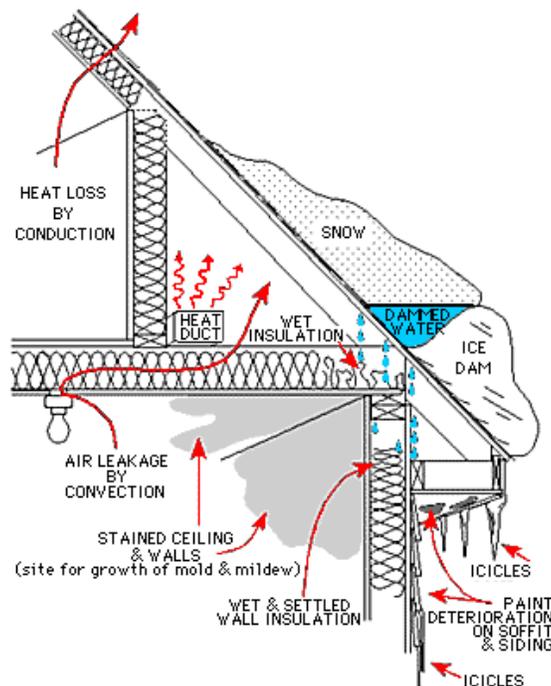
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Pitched Roofs:

An ice dam is a buildup of ice along the lower edge of the roof that prevents melting snow from finding its way to the gutters. Instead, the melting snow (generally caused by poor attic insulation) finds the dam of ice and refreezes at the soffit. Once an ice dam is present, water can back up behind the dam and leak into the house causing damage to the soffit, interior walls and attic space. Ice damming can also pull the gutters away from or completely off of the soffit. Damming leads to the formation of dangerous icicles and it can cause foundation and facade damage when water eventually runs onto the foundation and/or façade instead of into the gutters. Ice damming can fill an attic with mold and it can ruin sub-roofing materials and insulation.



Solutions:

- Attics should always be very close to the same temperature as the outdoors. If an attic is not well insulated then heat from inside the home will rise into the attic and cause snow on the roof to melt. As the snow melts over the warm attic it runs down to the soffit area that is the same temperature as the outdoors and refreezes. Insulation should be added to keep

the warm air from the living space from entering the attic space. Insulation should be added in the attic floor, not between the rafters.

- Outdoor air must be able to flow into the attic. All venting must be open so that air can flow inside the attic. This will ensure that the attic stays cool enough to minimize roof snow melt. Attic/roof vents often become blocked by insulation.
- Install a membrane between the roofing shingles and the sub-roof that runs at least 3 feet up the roof from the gutter. This will prevent moisture from leaking inside the home/attic if ice damming does occur.
- Make sure that gutters are properly sized and pitched. Keep gutters free of debris. Make sure that downspouts are not blocked or leaking. Make sure there is at least 1 downspout for every 30 feet of gutter.
- If all else fails, electric heating coils can be added in the gutters and along the lower 2 to 3 feet of roof. These coils must be on a dedicated electrical circuit that is GFI protected and someone must remember to turn them on BEFORE the temperatures go below freezing.

Flat Roofs:

The concept is the same but the differences relate to the porches behind most buildings with flat roofs:

As the water melts over the living space, it runs to the back of the building. When it hits the un-insulated back porch roof it refreezes. Again, improved insulation over the living space will help. But electrical heating coils are commonly used over the back porch roofs to prevent refreezing. Remember all electrical coils have to be GFI protected and someone has to remember to turn them on.

Things it would be better NOT to do:

- Shovel snow off the roof – this can be dangerous and the shovels can damage roofing materials
- Hire an inexperienced contractor to install electrical coils. These must be installed properly to avoid fire hazards
- Hire inexperienced roofers who will not install a membrane under the shingles
- Ignore the problem. Ignoring the problem can lead to attics full of mold, leaking basements and numerous other very expensive repairs

