



Ice dams, Provided by your Local Building Inspectors

When the temperature in your attic is above freezing, snow on the roof will likely melt. When the snowmelt runs down the roof and hits the colder eaves, it refreezes.

If this cycle repeats over several days, the freezing snowmelt builds up and forms a dam of ice, behind which water pools up into large puddles, or 'ponds'. The ponding water can then back up under the roof covering and leak into the attic or along exterior walls.

The right weather conditions for ice dams are usually when outside air temperatures are in the low 20s (°F) for several days with several inches of snow on the roof.

Attic condensation

Condensation of water vapor on cold surfaces in attics can cause wood to rot, which can lead to costly repairs. Condensation typically occurs when warm, moist air migrates or is directed into the attic from living spaces below. Research indicates unusually high humidity in the home's living spaces is strongly associated with attic condensation problems.

Prevention

Building codes have some requirements that attempt to prevent the problems of ice dams and attic condensation. But codes don't address all the issues, and many houses are built without following building codes. First and foremost, it's your builder or designer's job to understand the relationship of humidity and air movement when designing and constructing the house so these problems don't occur. Nevertheless, there's more you can do. Here are a few simple steps that can help prevent ice dams and condensation in your attic:

- Bathroom and kitchen exhaust fans, as well as dryer vents, should never be discharged into the attic space, always discharge outside. You may have an adequately ventilated attic, but this won't matter if the bathroom exhaust fan dumps warm moist air directly into the attic space. This will result in condensed water vapor freezing onto cold attic materials, which will eventually thaw creating wet attic materials resulting in damage in the attic and inside the home.
- Minimize ceiling mounted fixtures below the attic that create the need for holes in the drywall or plaster ceiling. Properly seal ceiling penetrations to make them airtight, taking care to follow manufacturer clearance requirements for flues, chimneys, and recessed light fixtures.
- Research shows keeping the attic air temperature below freezing when the outside air temperature is in the low 20s can reduce the occurrence of ice dams. Proper attic ventilation is key to keeping the attic cool, while adequate and properly installed insulation is key to keeping your house warm. It is critical to keep soffit vents free from obstructions to allow the natural flow of cool outside air into the attic space to replace the warmer attic air that rises and flows outside ridge and/or roof vents. This flow of air will keep the attic cool and free of moisture build-up.
- Consult a professional for the best way to avoid ice dams and water damage in your home.

While it might be tempting to try a quick-fix to break up that ice dam, don't get too eager; not only is it dangerous on your roof, but you can also cause a lot of damage, especially in the colder months.

- Do not attempt to "chip away" the ice of an ice dam or "Scrape" the shingles, it will likely lead to shingle damage.
- Do not install large mechanical equipment or water heaters in attics, without properly planning. They may present an unwelcome hazard, and they'll increase the temperature in your attic.
- Do not routinely use salt or calcium chloride to melt snow on a roof. These chemicals are very corrosive and can shorten the life of metal gutters, downspouts, and flashings. Runoff that contains high concentrations of these chemicals can damage nearby grass and plants.
- Do follow up with your licensed residential builder to be sure that the insulation in the attic space is adequate.
- Do Verify eave / soffit and peak venting exists for all roof planes and that soffit vents are neither blocked by attic insulation nor covered by newly installed maintenance free finishes outside the home. Create low intake & high exhaust, careful of varying heights of venting as this will create unwanted results.
- **Do** Verify all penetrations, access panels, and electrical fixtures are properly sealed and insulated to prevent heat and moisture from entering the attic space, while maintaining manufacturer's required clearances.
- Do Verify all exhaust fans and dryer vents are discharged to the outside properly.
- Do Keep gutters clean of leaves and other debris. This will not necessarily prevent ice dams, but clean gutters can help drain ice melt away as it makes its way to the gutters during a thaw.
- Do Follow up and consult a trusted and competent professional.

The information in this article was obtained from various sources, these suggestions are not a complete list of every loss control measure. The information is not intended to replace manuals or instructions provided by the manufacturer or the advice of a qualified professional.