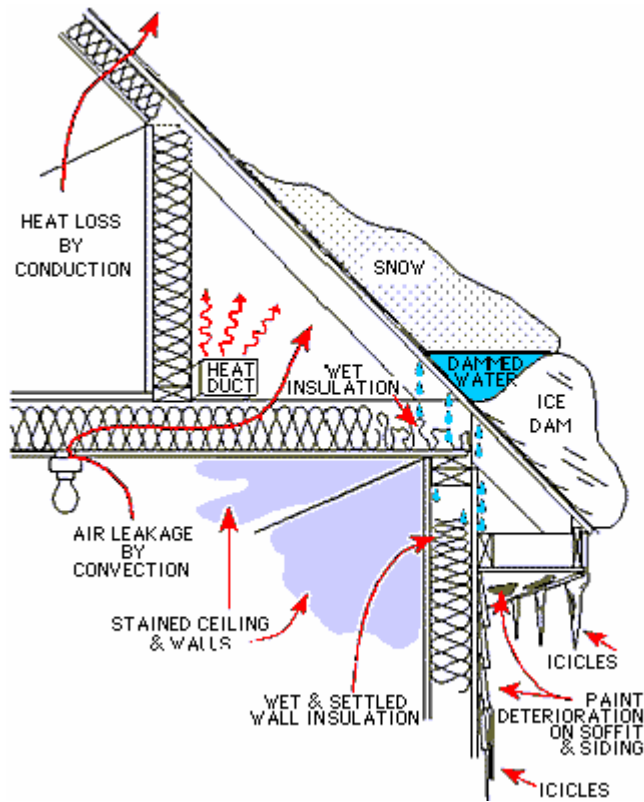


# Ice Dams

## What is an ice dam?

An ice dam is a ridge of ice that forms at the edge of a roof and prevents melting snow (water) from draining off the roof. The water that backs up behind the dam can leak into a home and cause damage to walls, ceilings, insulation, and other areas. **Figure 1** shows a cross section of a home with an ice dam.



**Figure 1. Cross-section of a one-and-a-half story house with an ice dam.**

## What causes ice dams?

There is a complex interaction among the amount of heat loss from a house, snow cover, and outside temperatures that leads to ice dam formation. For ice dams to form there must be snow on the roof, and, at the same time, higher portions of the roof's outside surface must be above 32° F while lower surfaces are below 32° F. For a portion of the roof to be below 32° F, outside temperatures must also be below 32° F. When we say temperatures above or below 32° F, we are talking about average temperature over sustained periods of time.

The snow on a roof surface that is above 32° F will melt. As water flows down the roof it reaches the portion of the roof that is below 32° F and freezes. Voila!—an ice dam.

The dam grows as it is fed by the melting snow above it, but it will limit itself to the portions of the roof that are on the average below 32° F. So the water above backs up behind the ice dam and remains a liquid. This water finds cracks and openings in the exterior roof covering and flows into the attic space. From the attic it could flow into exterior walls or through the ceiling insulation and stain the ceiling finish.