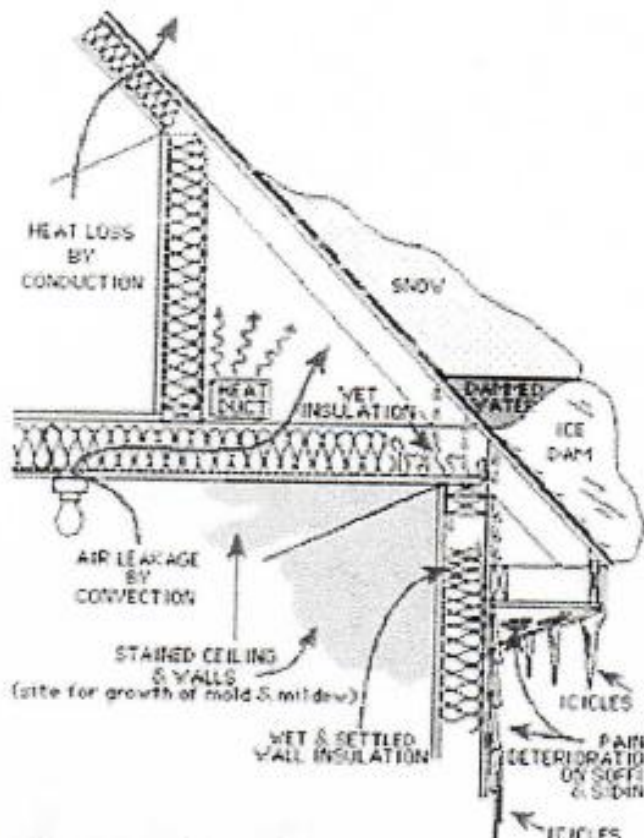


# Ice Dams

## What is an Ice Dam and how does it happen?



An ice dam is an accumulation of ice along the edge of a roof that does not allow water to run off the roof. Heat loss through a roof can cause snow to melt and the water to run off towards the roof overhang, or the valley between two adjoining roofs. Once water hits the un-insulated and colder overhang or valley, it can refreeze. When this process happens enough times, a dam of ice builds up, and the roof has no drainage. Subsequent water run-off hits the ice dam and backs up underneath the roof shingles. Once water is under the roof shingles, it can penetrate the roof sheathing and cause leaking. The water will seek the weakest or lowest spot of entry and you will see evidence of water on interior ceilings or walls.

The diagram above shows the formation of a typical ice dam.

## Causes of Ice Dams

Ice dams are caused due to heat loss from a building's roof. Air and vapor leaks from the inside through wall top plates, light fixtures, fan units, chimneys, around electrical and plumbing penetrations, and other openings are the most common cause. These air leaks are often started when warm air rises, and is able to meet with very cold air due to gaps in the air barrier, or thermal barrier.

In a winter when there snow loads build up on the roof, without melting and running off, these air leaks and deficiencies in the air barrier are exaggerated and leaks are more likely to occur. In extended periods of cold, melting occurs during the day, then freezes again at night.

## Can Ice Dams be prevented or stopped from occurring? These are a few ways to prevent or stop ice dams from accelerating:

1. Remove as much snow as possible from Roof edges, allowing Gutters to clear.
2. Stop the air flow that causes the snow to melt and refreeze near the roof overhang.
3. Make sure that all Gutters and Downspouts are clear of all leaves and debris to allow any melt to exit through the gutter system.

Just adding insulation to the attic will not prevent ice dams; the air flow from the conditioned space (inside home) to the unconditioned space (attic) must be stopped; insulation still allows air flow.