



# Customer Focus on Loss Control

Innovative Safety and Health Solutions<sup>SM</sup>

## Ice Dams

Ice dams can form on roofs in the winter months and, under certain conditions, can result in costly water damage to the interior of a structure. The ice dams form when water freezes on a cold spot on a roof, usually at the eaves. Water that pools behind the ice dam can eventually work its way through the roof covering into the structure. Ice dams can be prevented.

### What Causes an Ice Dam?

Three conditions must be present for an ice dam to form:

- \* snow on the roof
- \* heat to melt the snow
- \* cold to re-freeze the melted snow

Snow on the roof of a structure can act like insulation to protect the underlying snow which is in contact with the roof. Warm air in the attic warms the roof under the snow, causing the snow to melt. The melted snow water then trickles down the slope of the roof, protected by the overlying snow, until it comes in contact with the cold edge or eaves area. The snow melt re-freezes in the colder area. Prolonged freeze/thaw cycles allow the water to build up in the cold region of the eaves to form an effective dam of ice. With ice accumulation, the dam retains enough melt water behind it to allow the water to work its way under the roof covering, resulting in water entering the structure. Water can then make its way to the ceiling and/or run down the walls. Deep snow followed by frigid temperatures will increase the likely hood of ice dams.

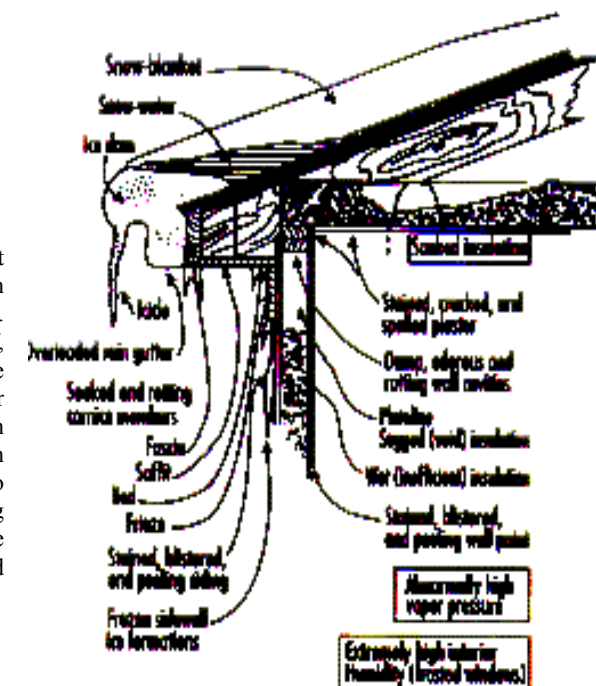
### Preventing Ice Dams

You cannot control outside air temperature, but you can eliminate the snow or eliminate the heat.

- \* Seal warm air leaks from interior rooms to the attic. (This will also cut your heating bills.)
- \* Ensure that you have adequate insulation in the attic. Homes in the Northern United States should have at least R 38 (about 12 inches of fiberglass or cellulose) above the ceiling.
- \* Be sure there is unrestricted air movement on the underside of the roof from the eaves soffit to the ridge.
- \* Clean the roof gutters in the fall after the foliage has fallen. Though clogged gutters do not create ice dams, they can cause ice to back up onto the roof.

### If An Ice Dam Develops

Remove all of the snow from the roof. This can be accomplished by shoveling, or by reaching up from the ground with a long-handled rake. Use caution so that you don't fall off the roof when shoveling, or get hit with a chunk of ice if you are raking the snow off the roof.



(Illustration courtesy of Institute for Business and Home Safety)

