

If the last two years are any indication of what is in store for the upcoming season, this winter will be a serious threat to homes and businesses, according to the Insurance Institute for Business & Home Safety (IBHS).

“Winter weather can inflict substantial damage to your home or business,” said Julie Rochman, president and CEO of IBHS. “Preparing now, while cooler weather is setting in but before freezing temperatures arrive, will help homeowners avoid costly losses.”

Ice Dams

An ice dam is an accumulation of ice at the lower edge of a sloped roof, usually at the gutter. When interior heat melts the snow on the roof, the water will run down and refreeze at the roof's edge, where temperatures are much cooler. The ice builds up and blocks water from draining off of the roof, forcing the water under the roof covering and into the attic or down the inside walls of the house. Take the following steps to decrease the likelihood that ice dams will form:

- Keep the attic well-ventilated. The colder the attic, the less melting and refreezing on the roof.
- Keep the attic floor well-insulated to minimize the amount of heat rising through the attic from within the house.
- As an extra precaution against roof leaks in case ice dams do form, when re-roofing install an ice and water barrier under a roof covering that extends from the lowest edges of all roof surfaces to a point at least 24 inches inside the exterior wall line of the building.

Frozen Pipes

Frozen water in pipes can cause water pressure buildup between the ice blockage and the closed faucet at the end of a pipe, which leads to pipes bursting at their weakest point. Pipes in attics, crawl spaces and outside walls are particularly vulnerable to freezing in extremely cold weather.

Frozen pipes can also occur when pipes are near openings in the outside wall of a building, including where television, cable or telephone lines enter the structure. To keep water in pipes from freezing, take the following steps:

- Fit exposed pipes with insulation sleeves or wrapping to slow the heat transfer. The more insulation the better.
- Seal cracks and holes in outside walls and foundations near water pipes with caulking.
- Keep cabinet doors open during cold spells to allow warm air to circulate around pipes (particularly in the kitchen and bathroom).
- Keep a slow drip of water flowing through faucets connected to pipes that run through an unheated or unprotected space.
- Drain the water system, especially if your building will be unattended during cold periods.

Is Your Roof Strong Enough?

Newer building codes provide much better guidance for estimating snow loads, particularly the increased loads near changes in roof elevations where snow drifts and snow falling from an upper roof can build up on the lower roof near the step. For flat roofs, the step-down area between roof sections is particularly susceptible to snow overload because of the tendency for ice and snow collection, especially during periods of windy weather.

Older roofs can suffer from corrosion of members and connections which can reduce its ability to resist high snow loads. Buildings with lightweight roofs, such as metal buildings or built-up roofs on bar joists generally provide less protection from overload than heavy roofs.

Roof top equipment and roof projections, such as mechanical equipment that is over two feet

tall, causes snow accumulation due to drift, creating the need for higher snow load consideration in these areas.

A serious condition can be created when a taller building or a taller addition is built adjacent to shorter, existing building. Unless the shorter building is strengthened in the area next to the taller building or addition, snow accumulation on the lower roof near the step could produce much higher loads than those considered by the original designer for the existing building.

The best source for determining how much snow load a building can handle is the original design plan. Most roof designs can support at least 20 pounds per square foot. However, design loads can range from 10 pounds to 20 pounds per square foot in Mid-Atlantic states, and between 40 pounds and 70 pounds per square foot in New England.

Guidelines to Estimate Snow Weight

- 10 inches to 12 inches of fresh/new snow equals about five pounds per square foot of roof space.
- three inches to five inches of old/packed snow equals about five pounds per square foot of roof space.
- Ice is much heavier, with one inch equaling about one foot of fresh snow.

Snow and Ice Removal from Roofs

IBHS recommends that property owners not attempt to climb on their roof to remove snow. A safer alternative is to use a snow rake while standing at ground level.