



Roof collapse – it could happen to you

by Ken Fingler, Risk Manager, HED Insurance



Every winter, many roofs collapse due to heavy snow or ice loads (especially from heavy, wet snowfalls in March and April). Roof collapse can happen to new and old buildings alike.

These roof collapses can result in extensive damage to the building and contents as well as disruptions to the business operation. Often, these roofs collapse suddenly, giving

the occupants little, if any, warning to evacuate the building. Many people have been injured and a few have perished in these accidents.

What causes these collapses?

The most common cause is the buildup of snow and/or ice that exceeds the load carrying capacity of the roof. While roofs are designed to withstand the snow load levels

that are normal to each region, unusually heavy/wet snowfalls or accumulations can stress the limitations of the roof strength. Over time, stress to the roof system weakens its structure causing it to collapse.

Low pitched and flat roofs are more susceptible to such collapses thus careful attention needs to be given to the level of snow accumulation on these roofs. Excessive accumulations of snow will require removal.

Under normal conditions, snow does not accumulate to great depths on flat roofs as most is blown off. However, under unusual conditions where heavy and wet snowfalls occur, such as at the end of March and early April, the snow sticks and doesn't blow off easily, thus overstressing the roof.

Moreover, steeply pitched roofs with large spans are also susceptible to sagging and may collapse under unusually heavy snowfalls, as we witnessed recently in the Maritimes. Several arena roofs were damaged under the weight of snow from four snowstorms within a two-week period.



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“Roof collapse can happen to new and old buildings alike.”

As well, additions to buildings may be subject to increased snowloads if they have lower height roofs. Snow may blow off the higher roof and accumulate onto the lower roof level. In the case of lean-to type additions to large buildings with peaked or arched roofs such as arenas, snow accumulations on the higher roof may suddenly slide off the roof as it melts, and then crash down on the addition, resulting in its roof to collapse.

All of these cases may be prevented with careful monitoring of the snowloads and removal of excess snow accumulations.

Caution is needed when removing snow or ice from your roof as workers could be injured by falls, and secondly, considerable damage to the roofing materials may be done when using excessive force to remove snow or ice. This occurred numerous times during the ice storms in eastern Canada in 1998.

To prevent injury or liability be sure to do the following:

- 1) If using a contractor to clear the snow, ensure that the contractor has adequate liability insurance coverage in the event that the contractor or his workers cause damage to your building or injury to passersby. Have your municipality added as an additional insured with respect to the liability for the project.
- 2) When clearing snow from a roof, do NOT pile all the snow in one area before removing it. This may overstress that section of the roof causing it to collapse.
- 3) When constructing a new building or an addition, check to ensure that the contractor carries Course of Construction insurance for the full value of the project and at least \$2,000,000 Liability insurance. Have your municipality added as an additional insured with respect to the liability and have them provide you with a Certificate of Insurance to confirm coverage. ⚡

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