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Protecting Your Home Against Snow & Ice:

Roof Collapse



Winter in Canada is beautiful, but it also brings unique challenges for homeowners. Heavy snowfall, ice, and freezing rain can put extra stress on roofs.

With regular inspections, timely maintenance, and a few preventative measures, you can keep your roof secure and your winter worry-free.

Understanding the Causes of Roof Collapse

A strong and well-maintained roof is your first line of defence against winter weather. Knowing what contributes to excessive roof stress helps homeowners to **take preventive actions**. Common factors include:

- Heavy snow loads exceeding the roof's weight capacity.
- Wind-driven snow drifts, creating uneven loads.
- Rain freezing on top of snow, adding weight and strain.
- **Ice dams**, preventing proper drainage and causing water buildup.
- Clogged gutters, leading to ice formation and additional stress.

Being aware of these factors empowers homeowners to stay ahead of potential issues and keep their roofs in top condition.

Spotting Signs of Roof Stress

Early detection is key to preventing small roof concerns from turning into significant problems. Throughout winter, especially after heavy snowfall or freezing rain, watch for these warning signs:

- **New water leaks:** Check for drips, mould, or moisture in ceilings or the attic
- **Difficulty opening interior doors:** This might indicate pressure on the structure due to heavy snow or ice loads on the roof
- **New cracks in drywall or plaster:** These can be a sign of structural stress
- **Sagging ridge line (on sloped roofs):** A noticeable dip where the two sides of the roof meet may indicate an excessive weight

If you notice any of these signs, taking action by reducing snow and ice buildup can help maintain your roof's integrity

Proactive Steps to Prevent Roof Collapse

According to the **Institute of Catastrophic Loss Reduction (ICLR)**, the first step in winter roof care is understanding whether your home is prone to significant snow or ice accumulation. Flat and low-sloped roofs are more susceptible to these issues than steeper roofs, which are better at naturally shedding snow and ice. But even roofs with a steep slope can accumulate snow and ice on flatter sections or around features like chimneys, skylights, and dormers.

Next, it's important to understand how much weight your roof can tolerate. Most roofs in Canada are designed to support at least 97 kilograms per square metre. Snow and ice weight varies, with light, fluffy snow typically weighing about 112 kilograms per cubic metre, while compacted, older snow can weigh over 480 kilograms per cubic metre. If rain falls on top of snow and freezes, that will add even more weight.

Monitoring snowfall and taking proactive steps to reduce the snow and ice load on the roof before it reaches high-risk levels will help to keep it secure.

Regular Roof Maintenance

A well-maintained roof is more resilient against snow and ice. Consider these best practices to prevent winter weather-related damages:

- Inspect regularly for signs of wear, damage, or potential weak points.
- Keep gutters and downspouts clear to allow proper drainage and prevent ice dams.
- Ensure repairs and reinforcements are completed before winter arrives.

Staying ahead of potential issues can significantly enhance a roof's durability.

Safe Snow and Ice Removal

After a heavy snowfall or ice event, it may be necessary to remove some of the excess weight from the roof.

With a sloped roof, use a snow rake with an extendable arm (available at most hardware stores) to remove snow and ice. Clearing the snow in layers or sections helps to maintain balance and prevent uneven snow loads. Reducing the excess snow to around 5-7.5 centimetres from the roof should be enough to lessen the stress, provided that melting snow and ice can drain properly.

Preventing ice build-up on a roof is tricky, but not impossible. Installing electric heating cables on the roof can help to minimize ice formation. These cables are not suitable for every roof, and professional installation is recommended. Chemical de-icers can also help to improve drainage, when applied strategically in small openings to guide meltwater safely away from the roof.

While DIY snow and ice removal is an option, it does come with risks. The safest way to remove snow and ice is to contact a licenced and insured snow removal contractor that has the right equipment, safety training and experience to get the job done.

Winter weather is unpredictable, but with regular inspections, timely snow and ice removal, and proper maintenance, homeowners can prevent roof damage, minimize disruption to their daily routines, and protect their homes from the challenges of winter

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