

Risk A/T[®] Work



Risk A/T[®] Work is a forum dedicated to sharing safety and loss control tips with our brokers and insureds. **Risk A/T[®]** is our proprietary risk management approach promoting informed risk analysis based on two behavioral factors — **A**ptitude and **T**olerance.

Reducing The Risk of Weather Related Roof Damage and Collapse

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Roofs are designed to carry specific loads (weight) and one of those loads is weather, including rain, snow and ice. Whether from a single weather event or multiple events, when the weight of weather exceeds the roof system's designed load limit, damage or collapse may occur. However, roof damage and collapse can be prevented when property owners and managers take appropriate precautions.

Design and Engineering

During the planning and design period for a new building or addition, architects and engineers review and calculate review the expected snow and ice loading for the site and build an appropriate weather loading factor into the roof design. Roof shapes and roof height changes should be designed to minimize snow drifts.

In addition, when changes are made to roof systems, including the addition of new equipment, a structural engineer should be engaged to evaluate the impact on overall roof performance

Maintenance to Prevent Weather Damage

Inspections of roof systems and addressing maintenance items are key factors in preventing weather related roof damage and should include:

- Check, clear and repair roof drainage systems
- Check roof surface for sagging and pooling or water
- Check roof support systems for signs of damage or fatigue, including buckling or bent members, corrosion, cracked timbers or boards

- Check for bent, deformed or leaking piping that is attached to the roof systems
- Check for damaged or missing insulation

- 1 inch of snow weighs 0.3 to 1.7 pounds per square foot. **Quick estimator:** 1 lb/ft² per inch of snow for dry to normal snow or 2 lb/ft² per inch for wet/heavy snow for each square foot.
- 1 inch of ice weighs 4.8 pounds per square foot

Removing Accumulated Snow

How, when and who should remove snow are best answered by knowing the maximum safe roof snow load, the weather forecast, and the ability to remove snow safely.

- Site management and maintenance teams need to understand the weather capacity of the roof. It is best to express this in terms of inches of snow or ice. It is also helpful to express this in terms of inches of rain per hour.
- When heavy snow or weather events are forecast, add the current snow load to the expected new snow load to determine if the roof can support the weight. When the answer is no, "old" snow should be removed from the roof before the event. When total predicted snowfall exceeds the capacity of the roof, it may be necessary (if it can be done safely) to remove snow during the event.





- Snow should be removed by people competent to perform the tasks and those who have the appropriate safety equipment and safety training. It is a best practice to identify snow removal contractors before they are needed; this way, contracts and risk transfer language can be reviewed by legal counsel.
- Removing all snow from the roof is usually not necessary to reduce snow loading to a safe level. By leaving a small layer of snow, the risk of damaging the roof surface from shoveling or raking is reduced.

We're here to help

To learn more about reducing winter weather related roof risks, contact your Sompo Risk Control Specialist or reach out at +1 877 667 5733 or RiskControlQuestions@sompo-intl.com for guidance on safeguarding your property and people with confidence.

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