Global Risk Solutions

Snow Loading Checklist

Some buildings' roofs are more susceptible to snow loading than others. Excessive snow build up can cause the roof structure to collapse resulting in the high costs of building replacement, damaged materials and equipment, and loss of production.

Risk and loss potential

It's important to evaluate your roof structure on a regular basis to ensure you are prepared for snow and ice. The following is a list of considerations to take into account when evaluating your roof structure:

- Have there been any lower roofs, canopies or covered walkways added to the structure? If so, have the effects of sliding and drifting snow been considered for these additions?
- Have any roofs been retrofitted with additional insulation in an attempt to conserve energy? If so, have the increased snow loads due to reduced melting been considered as well as the additional dead load from the insulation?
- Have solar panels, mechanical equipment, or other roof projections been added to the building? If so, has the roof been checked to assure that it can withstand the additional sliding and drifting snow loads, as well as the additional dead load?
- Is it possible that buildings will be unheated for long periods? If so, is the roof capable of withstanding additional snow load? Don't forget planned shutdowns and holidays!
- Do roofs that slope toward internal drains have slopes of at least 1/4 inch per foot? If not, these roofs must be routinely checked for ponding. Low areas should be repaired and/or additional drains added.
- Are all drains, gutters, and downspouts free from debris? If not they should be cleaned and kept cleared.
- Can a visual examination of the roof's structural members be made? Leaks are usually the first sign of potential problems. Is there any sign of sagging or misalignment? Are there any corroded, cracked, and/or buckled steel members, split and/or rotted timber members, or cracked and/or spalled concrete members? For any problem that is identified, a qualified professional engineer should be retained for further investigation.
- Have additional dead loads, such as air conditioners, heaters, or suspended storage platforms been added to the roof's structural members which decreases the roof's live load capacity?

Warning! Snow removal is a dangerous activity that should only be done by qualified individuals following safety protocols to minimize risks. If at any time there is concern that snow loads may cause a collapse of the roof structure, cease all removal activity and evacuate the building.

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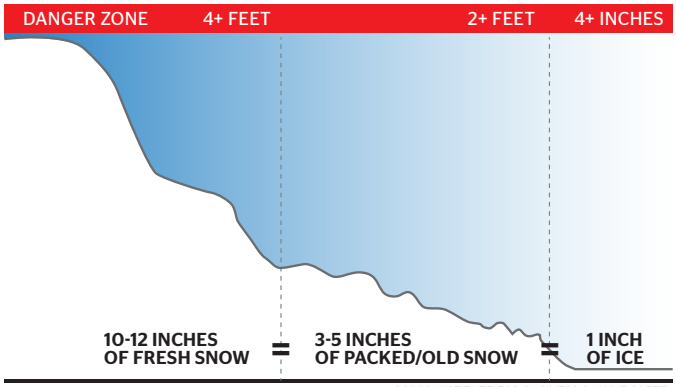
How much snow is too much for your roof to bear?



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To prevent snow-laden roof collapse, preventive maintenance is the key to prepare your facility for winter snow loading. Before each winter do the following:

- Ensure drains are unplugged and structural members are in good condition prior to snow fall.
- Any additions or alterations to the building should be reviewed by a professional engineer to determine the impact it will have on the roof structure.
- Contract with an experienced roof snow removal firm that can prepare a snow removal plan for your structures.
- Review your emergency snow removal plan with key personnel. As part of this plan, the following should be considered:
  - Provision of dependable means of transporting snow removal equipment to the roof.
  - Maintaining a stand-by crew during storm warnings.
  - Determination of when snow removal should begin (i.e., 50% of live load design).
  - How to transport snow from the roof. Avoid relocating to another portion of the roof.
  - Roof hatches or making a new opening.
  - Acquiring snow blowers of sufficient size to handle the volume of snow. Set snow blower blades to maximum height to avoid damage to the roof covering and to prevent the pickup of ballast material. It is preferable to remove snow from the ground using snow rakes or other devices.
  - Location of roof penetrations and protrusions such as vents, drain screens and utility openings need to be identified prior to using power snow removal equipment to prevent personnel or equipment falling through an opening.

References

QBE North America Global Risk Solutions

For a comprehensive report see the FEMA Snow Load Safety Guide

IBHS

Do's and don'ts for safely removing snow from your roof

QBE North America

55 Water Street
New York, NY 10041

Tel: 212.422.1212
Fax: 212.422.1313
qbena.com

@QBENorthAmerica