

MUNGER

Tech Tip

Protect Your Building Against Weather Threats

Heavy and/or repeated snow storms can create such a high amount of packed snow and ice that only a few feet of depth may weigh 50 pounds per square foot or more, imposing excessive loads on any building structure. Blowing and drifting snow can easily double these loads and rain on snow can also cause significant load increases. Extreme accumulation of snow can cause a building to be loaded beyond design capacity creating a risk of building damage or even collapse. Most snow related losses occur at stepped elevations where blowing snow is carried from the roof of a higher building onto the roof of a lower building. Such drifting normally occurs where the buildings are attached.

PROTECTION
AGAINST
WINTER
WEATHER

However, drift loads can form:

- On closely adjacent buildings
- On or over ridges
- At valley conditions
- Behind parapets
- Next to rooftop units
- On below-eave canopies or overhangs
- Through post construction changes to the building site
- Through the addition of higher buildings
- As a result of significant tree growth
- After modifications have been made to the structure (such as post addition of snow retention devices)
- If loads are added after the original design (such as piping, roof units, hanging heaters, etc.)
- If there has been prior structure damage





How To Prevent Damage As Building Owners

Much of the public is unaware of the consequences of snow build-up on roofs. However, many property insurers are beginning to provide more information on what to do in the event of a snow emergency, such as removing excessive accumulations of snow from the roofs and advising building owners to activate a snow watch-and-removal crew to monitor snow depths.

Building owners should be advised to keep drains and gutters clear of ice and snow to facilitate melting run-off. Ice and snow build-up can cause exorbitant loads even without drifts. Heat tapes in gutters and downspouts may assist in preventing ice build-up, except in extremely low temperatures.

Building owners should also be aware of warning signs inside the building that may indicate excessive snow accumulation, including the deflection of purlins, the popping of ceiling tiles in dropped ceilings and unusual noises. If any of these situations occur, the building owner should be advised to contact you immediately for assistance.



Steps To Removing Snow And Ice

1. Always provide proper safety precautions when working on the roof, especially along the edge. Never send one person on a roof to remove snow alone. Place ladders at the end of the building so sliding snow will not dislodge workers.
2. Prior to removing snow from the roof, remove all hanging icicles from eaves and gutters. These can be quite heavy and cause snow/ice to hang up.
3. Remove drifted areas first, down to the level of the snow on the remaining roof. Next, remove the snow from the middle 1/3 of each bay (from eave to eave), beginning with the most snow-packed bay. Complete snow removal on the remainder of the building. On gabled buildings, remove snow on both sides of the ridge at the same time.
4. Remove snow in a pattern that does not cause an unbalanced loading condition. Avoid the large differences in snow depth between adjacent areas of the roof. Remove snow gradually in layers from all over the roof.
5. Remove snow from eave toward ridge, but be cautious of snow or ice breaking away and sliding down the roof.
6. Do not pile shoveled snow on other areas of the roof or on other roofs. Keep dumping area clear of all persons and property.
7. Always use plastic shovels. Do not use picks, axes or other sharp tools.
8. Do not attempt to remove snow by washing it off with a hose. Snow acts as a sponge and will rapidly absorb water, increasing the loads on the roof and potentially causing failure. Also, do not attempt to use chemical salts to remove snow.
9. Be careful to avoid hitting fasteners, snow guards or other roof attachments. And be careful removing snow and ice around ventilator bases, pipe flashing, rooftop unit supports, conduits, etc., since such items are easily damaged.
10. Be aware of skylight system locations. These panels are not intended to support roof foot traffic loads.



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