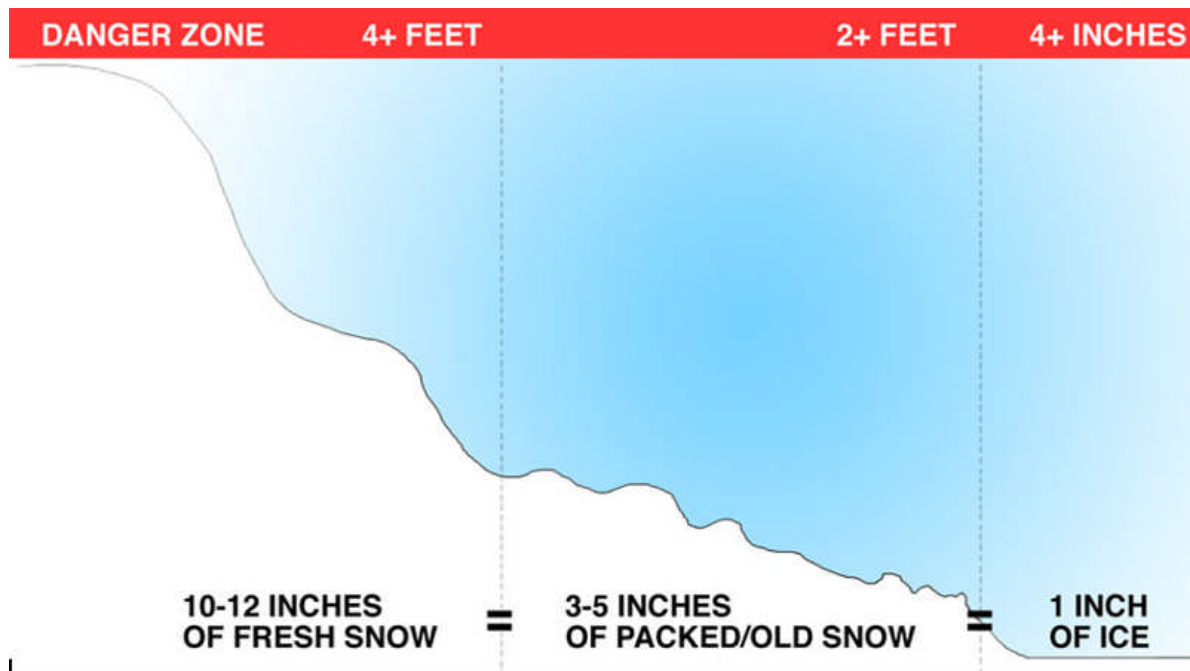


SNOW - HOW MUCH IS TOO MUCH FOR A ROOF?

When it comes to the weight of snow, the type of snow is as important as the depth of snow. Fresh "powder" type snow is typically lighter than wet packed snow. Ice is heavier than snow. During the winter months, a roof system can be exposed to all three combinations over a several month period.



IBHS OFFERS THESE GENERAL GUIDELINES TO HELP ESTIMATE THE WEIGHT OF SNOW:

- Fresh snow: 10-12 inches of new snow is equal to one inch of water, or about 5 lbs per square foot of roof space.
- Packed snow generally is heavier than new snow: 3-5 inches of old snow is equal to one inch of water, again about 5 lbs per square foot of roof space.
- Ice is also heavier than snow. One inch equals about a foot of fresh snow.
- The total amount of accumulated snow and ice is what matters in evaluating snow load risk. For example, the accumulated weight of two feet of old snow and two feet of new snow could be as high as 60 lbs per square foot of roof space, which may stress the limits of even the best designed roof.

If you are in the "danger zone" according to chart above or if the loads you estimate based on the thickness of the various types of snow and ice exceed 20-25 psf, you should consider having the snow removed from your roof.

PREVENTING ROOF COLLAPSE

IBHS has outlined a number of factors that could dictate how your particular facility will perform under the weight of ice and snow. These factors are listed below and link to detailed information on the IBHS website, DisasterSafety.org, which includes engineering considerations that could help you avoid roof collapses this winter.

- Live and dead load design
- Age of the building and the roof
- Condition of the roof
- Elevation
- Maintenance during or after a major snow storm

Roof top equipment and roof projections can cause snow accumulation due to drift, creating the need for higher snow load consideration in these areas.

ADDRESSING ROOF STRENGTH

If it is determined that the roof system is not adequately designed to withstand the snow falls being encountered, a building owner should consider strengthening the roof as soon as possible or before the next winter. A structural engineer can determine the maximum loads your roof can withstand, as well as provide practical solutions to improve the strength of your roof.

SNOW REMOVAL

Safe snow removal may reduce some of the snow load on your roof. Consider contracting with a professional for snow removal. If your workers will be removing snow keep the guidelines below in mind. To avoid roof collapse, snow removal should begin prior to reaching the snow load limit of the roof.

Always follow Occupational Safety and Health Association (OSHA) Regulations and Standards, particularly fall protections for roof work. Avoid using shovels or snow blowers. Instead, use a heavy duty push broom with stiff bristles or roof rake to brush off the snow down the slope of the roof. For most single-story buildings with steep sloped roofs, a roof rake may be used for while remaining on the ground to pull snow down the roof slope. Do not pull snow back against the slope or sideways since the snow may get underneath the cover and can break shingles.

If you see indications that the roof is deflecting under the weight of the snow in certain areas, be sure to keep people away from those areas and seek the help of a professional snow removal expert.

