

MOA Snow Removal Notice

Issued January 23, 2024

Residential Buildings:

- We are not aware of any significant structural failures in residential buildings this season. However, some buildings could contain roof structure experiencing distress.
- We have received confirmed reports of snow loads of over 30 pounds per square foot, and there could be areas of town that have a higher snow load. That is a lot of weight. A home having 1,500 square feet of roof with 30 psf of snow would be supporting around 45,000 pounds, or about 8 full size light duty pickup trucks.
- Given how early it is in the season, people should consider removing the snow to reduce the weight on the structure.
- Since the resilience of residential construction in Anchorage is variable, there is no one answer that applies to everyone.
- If you are experiencing obvious signs of distress, the snow should be removed as soon as possible. These may include:
 - Sagging roof: Noticeable sagging in the roof is a clear sign the weight of the snow is too much for the structure to bear.
 - Strange noises: Sounds like creaking, popping, or cracking coming from the roof or attic area can indicate the roof is under stress from the snow's weight.
 - Doors and windows that used to open freely stick or jam: If interior doors or windows begin to stick or can't be opened easily, it may be a sign that the weight of snow is deforming the structure of the house.
 - Ice dams: Ice dams forming at the edge of the roof can create a heavy load on the eaves and lead to water damage as snow melt on the roof finds it's way into the structure.
- It is important that snow is thoughtfully removed so as not to create piles that can overload portions of the roof, or that create unbalanced loads on structural members.
- One should leave a few inches of snow to protect the roof covering. Be careful not to damage plumbing vents, exhaust outlets, ridge vents and other obstacles protruding above the roof deck.
- If you plan to do the work yourself, please take the necessary precautions to ensure you do not fall off your roof. If you hire someone to remove snow, make sure they are licensed, bonded and insured.
- Further guidance will be provided as warranted.

Commercial Buildings:

- Last winter Anchorage experienced several wood truss failures.
 - A few of these failures resulted in catastrophic roof collapse.
 - In all cases but one, the weight of snow being supported was less than the design value of 40 pounds per square foot. Roof failures have occurred with 20 to 25 pounds per square foot of snow on the roof.
 - The truss failures occurred in commercial construction built prior to 1990.
 - The trusses were constructed from wood with metal gang nail plates.
 - Top chord bearing parallel cord trusses demand extra attention due to a potential design flaw that can result in a cross-grain tension (shear) type of failure in the top chord near the bearing point.
 - Bottom chord bearing trusses have also failed, including a pitched-roof type of truss.
- If you own a building falling within these parameters, we ask that you remove the snow/ice from the roof. Reasons:
 - Anchorage has received an exceptional amount of snow early in the season.
 - We estimate that typical roof snow loads in Anchorage are at 50% to 80% of the total design snow load of 40 pounds per square foot, depending on location, melting, etc.
 - It is likely we will continue to see more precipitation this winter and we should expect roof snow to continue to accumulate.
 - Time matters. When subjecting wood construction to large loads, duration matters. The longer wood is subjected to extreme stress, the greater the chance of failure.
- We estimate there is between 500 and 1,000 buildings in Anchorage that have the roof trusses of immediate concern. Given the large number of buildings and limited snow removal resources, we ask that snow removal contractors prioritize buildings described in this guidance.
- It is important that snow is thoughtfully removed so as not to create piles that can overload portions of the roof, or that create unbalanced loads on structural members.
- If you hire someone to remove snow, make sure they are licensed, bonded and insured.
- Further guidance will be provided as warranted.

- For more information, see Handout AG.30 - Snow Removal Guidance:
 - <https://www.muni.org/Departments/OCPD/development-services/pages/default.aspx>
- Also see Draft Policy S.12 – Wood Truss Roof Framing Due Diligence Investigation:
 - https://www.muni.org/Departments/OCPD/development-services/Documents/Draft%20Policy%20S.12%20Wood%20Roof%20Trusses_1.pdf