

ADM-2 Roof Snow Loading Policy and Action Plan for the Hingham Public Library

[Interim policy ver. 3 11/16/11]

Policy statement

Whereas public safety and protection of life and property are uppermost interests of the Board of Library Trustees, it shall be the policy of the Library to take all prudent actions to secure these interests.

Factors to be considered in making decisions applicable to this policy

Maximum snow-load for the roofs of the Hingham Public Library is 31.5 pounds per square foot (live load).

The average density of a snowfall is 6 pounds per cubic foot. This means it would take an estimated 5 feet of snow to place the roofs in danger of collapse.

Rain saturated snow weighs as much as 13 to 15 pounds per square foot. Approximately 2-2 1/2 feet of water saturated snow places the roof in danger of collapse.

Alleviation Guidelines

Alleviation is defined as the removal of sufficient snow from the roof to return the live load to safe operating conditions. Alleviation measures may require the temporary closure of the Library to safely and practically conduct this work.

The Library Director may authorize actions to alleviate load when 75% of the maximum live load is reached (approximately 24 pounds per square foot):

For dry, light snow causing an estimated 6 pounds per square foot of load, alleviation measures should begin when accumulated snowfall has reached **4 feet**.

For moderately wet snow causing an estimated 10 to 12 pounds per square foot of load alleviation measures should begin when accumulated snowfall has reached **2 & 1/2 feet**.

For water saturated snow causing an estimated 13 or more pounds per square foot of load alleviation measures should begin when accumulated snowfall has reached **2 feet**.

The ranking custodian on duty shall conduct the snow accumulation measurements. If possible, several roof locations should be measured to obtain the best estimate of accumulation.

Pre-storm safety measures

If a snowfall of 6" or greater is forecast by the National Weather Service or other forecasting service utilized by the Town of Hingham, the Library's Custodial staff must inspect all roof scuppers and the addition roof drain and clear them of all debris.

During storm safety measures with building occupancy

Custodial staff regularly monitors roof snow depth, paying particular attention to areas where snow tends to drift:

1. In low roof sections adjacent to higher sections or structures.
2. Adjacent to rooftop HVAC units or other large roof structures.
3. Remove roof-top snow during a storm only if the forecast indicates that the total snowfall will result in dangerous accumulations.
4. Remove snow in layers uniformly across the roof to prevent unbalanced loads, which might cause a collapse. Avoid making snow piles on the roof during the removal process.
5. Clear snow and ice from storm drains and catch basins if they can be safely reached.
6. Monitor exposed interior roof wooden beams in original library building for deflection or unusual cracks (the beams have some benign existing cracks).

Post-storm safety measures

As soon as it is practical and safe to do so, the Custodial staff must inspect all roof scuppers and the addition roof drain and clear them of snow and debris. At this time, the roofs should be inspected for damage or deterioration. If a follow-on snow or rain storm is forecast to arrive within the next 48 hours or less after a snowstorm ends, the Custodial staff and Library Director should discuss in a timely manner additional alleviation measures. The Library Director should decide what actions are to be taken as result of this discussion.

The interior of the building should be visually inspected by the Library Director and Supervising Custodian before bringing staff and members of the public into the building for resumption of operations.

Communication about matters covered by this policy

The custodial staff on duty must contact the Library Director for authorization to begin alleviation measures involving hired contractors. In the absence of the Library Director, contact the President of the Board of Trustees for this authorization. The Library Director or the President of the Board of Trustees shall inform the Town Administrator of the planned action as soon as possible.

Prioritization of Alleviation Measures

The original 1965 Library building shall be the first roof to receive alleviation measures because of the long-span structural beams.

The former Town Office Building wing shall be the second roof to receive alleviation measures.

The new addition comprising the entrance, gallery and café shall be the third roof to receive alleviation measures.

Financial impact per alleviation effort

As the occurrence of a snow event which would require alleviation steps to be taken is unpredictable, no specific funding is included in the Library's annual Town operating budget for this purpose. Consequently, any expenditures related to alleviation would be submitted via a Reserve Fund Transfer.