



## Freeze and Thaw Impacts on a Roof

**Freeze-Thaw Cycle:** The freeze-thaw cycle occurs when temperatures drop below freezing at night and rise above freezing during the day. Significant water damage can result from ice dams forming at roof edges and around drains. Expanding areas of ice can damage roof membranes and flashing and wrench gutters out of place, and cause water to pool behind the ice dams where it can make its way into the building, etc.

Additional weight from accumulated water and ice located behind ice dams and in low spots and compressed areas, etc. can stress a building's structural integrity. Ice dams can continue to creep higher up the roof as more water freezes behind it, adding more weight. MIIA has developed a comprehensive [Technical Guidance Document](#) that will assist in identifying and preventing freeze-thaw cycle damage to your roofs.



**Loss Lessons Learned:** Freeze-thaw cycles can cause costly roof damage, with ice dams trapping water, leading to leaks, structural stress, and membrane or flashing failures. Expanding ice can dislodge gutters and worsen moisture intrusion. Proper insulation to prevent areas on the roof to cool, ventilation, and functional drainage help prevent these issues and reduce repair costs.

**For complete details on the steps to protect your facilities, please refer to the linked technical guidance document. In addition, some of these practices may be eligible for MIIA Rewards credit, and the tools may be eligible for a MIIA Risk Management or Flex Grant. Please discuss with your Risk Manager for further details.**

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