



Technical Guidance Document

Roof Ice Dam Prevention

Fluctuating temperatures cause freeze-thaw cycles that can lead to ice dams, water intrusion, and structural stress on roofs and building structures. This Technical Guidance Document outlines best practices for identifying warning signs, maintaining proper insulation, ventilation, and drainage to minimize damage.

Inside Indicators:

1. Visible signs of leaks: Look for ceiling discoloration, bubbling paint, peeling wallpaper, warped drywall, or dripping water, especially after a thaw. Damp insulation and water stains on ceilings or walls can indicate seepage.

Outside Indicators:

1. Icicles: While not a direct sign of a leak, large icicles hanging from the roofline can be a warning sign that snow is melting and refreezing, which is the process that leads to ice dams.

2. Ice build-up on roof edges or gutters: A ridge of ice at the edge of the roof is the most direct indicator of an ice dam. This ice can also damage gutters and downspouts.

3. Damaged flashing or roofing materials: Look for separated seams, gaps between roofing layers, or cracked flashing. Trapped moisture that freezes and expands can cause these issues, allowing further water intrusion.

Preventative Measures:

1. Keep the temperature of the roof consistent and eliminate cool spots to prevent the snow from melting and refreezing and causing ice dams by:

- Providing proper ventilation and airflow to allow moisture to escape, which helps prevent condensation and subsequent ice from forming.
- Ensuring there's adequate insulation to prevent heat from the building from melting roof snow from beneath.

2. Seal all air leaks: Identify and seal all potential air leaks between the conditioned spaces below and the attic above. Use caulk, spray foam, or weatherstripping to seal leaks around chimneys, plumbing stacks, attic hatches, and light fixtures.

3. Regular Maintenance: Clean and maintain gutters, drains, and scuppers regularly to ensure proper water drainage. Remember to mark them on the roof to prevent snow from obscuring their location for maintenance.

4. Consider professional assistance: Consult a professional to perform a building envelope assessment to identify vulnerabilities, such as improper sloping or inadequate ventilation, that may lead to ice dams.

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