

Routine Maintenance Can Protect Your Commercial Roof from Convective Storms



Severe convective storms that can produce high winds, hail, and lightning—such as strong thunderstorms, derechos, and straight-line winds—occur across the United States and cause billions of dollars in losses annually. The increase in losses resulting from these storms continues to outpace advances in detection, forecasting, and mitigation. However, proper routine maintenance throughout the year can help reduce the overall damage to your commercial property. Here are 5 areas to address to help keep your commercial roof convective storm ready.

1. Roof Cover

The roof cover is one of the most vulnerable components of a building when exposed to high winds and hail. Routine maintenance can prolong the life of your roof cover and reduce roof damage during an event.

- Plan several inspections throughout the year to monitor the condition of your roof cover, particularly around season changes and after storms.
- Look for tears, bubbles, cracks, and ponding water.
- Remove excess debris and inspect for loose or missing roofing materials regularly, and after any roof contractor does work on the roof.
- Reduce hail damage with impact-resistant products. IBHS has developed a scorecard rating the performance of various impact-resistant asphalt shingles and suggests selecting a product with a “Good” or “Excellent” rating. Learn more at ibhs.org/hail/shingle-performance-ratings.
 - For other steep-sloped roof materials beyond asphalt shingles, use products with a UL 2218 Class 4 or FM 4473 Class 4 rating.
 - For low-sloped roofs, use products with an FM impact rating of Severe Hail (SH) or Very Severe Hail (VSH).
 - Additionally, protect the mechanical fasteners and plates that secure insulation boards on low-sloped roof covers by placing them below a coverboard with the roof cover adhered to the coverboard.
- Consider hiring a licensed roof contractor to conduct a scheduled preventative maintenance plan.

2. Roof Flashing

Roof edge flashing refers to the strips of metal or other material installed around the roof edge where the roof cover meets the wall. When the flashing is compromised, it leaves important building systems including the roof cover vulnerable to the elements (such as wind-driven rain), which can cause significant damage.

- Check for loose or ill-fitted perimeter flashing, which greatly increases the potential for roof cover failures.
- Hire a contractor to repair loose or damaged flashing per the manufacturer’s instructions/guidance.



Loose or ill-fitted flashing can cause roof cover failure and water intrusion during high-wind events.

3. Roof-Mounted Equipment

During a convective storm, unsecured equipment is subject to sliding, lifting, and overturning. This can cause significant damage to a roof cover and water intrusion. Additionally, HVAC units can be severely damaged by hail, leading to inefficient performance, energy loss, and potential business downtime.

- Securely attach equipment to a curb that is attached to the roofing structure. Inspect equipment for any loose or missing connections.
- Inspect for loose flashing around roof-mounted equipment, curbs, and roof hatches, which could lead to potential failures of the unit's structure and water intrusion.
- Clear all debris around and under roof-mounted equipment. Debris can cause water to pond, which could cause costly damage to the roof and interior.
- Ensure service panels have all fasteners in place, so panels do not become dislodged.
- Reduce hail damage by having a qualified professional install "hail guards." These specially designed protection systems cover the vulnerable parts of outdoor equipment and are a cost-effective way to reduce damage. [Learn more.](#)



*Loose roof-mounted equipment can lead to significant roof cover damage and water intrusion.
Have a professional inspect your roof-mounted equipment to prevent costly damage.*

4. Skylights

When damaged by wind or hail or when not properly attached, skylights can cause a breech in the building envelope, leading to significant interior damage.

- Regularly inspect skylights for cracks and leaks; also inspect securements to the curb and address any rotting.
- Hire a contractor to repair or replace damaged skylights.
- Reduce hail damage by using impact-rated skylights that (1) meet at a minimum ASTM E1886 cyclic pressure test requirements and (2) are ASTM E1996 missile impact rated “B,” “C,” “D,” or “E.”
 - Alternatively, use skylights that are either FM Approved per ANSI/FM 4431 with severe hail rating, or Miami-Dade County Approved (MDCA) with current notice of acceptance.

5. Lightning Protection Systems

Lightning protection systems can serve as defense against dangerous lighting strikes to your building. However, if they are not properly attached, they are no longer capable of providing the intended protection; this also can cause damage to other structures or roof components during high winds. Proper maintenance of these systems can help prevent tears or other significant damage to your roof cover.

- During routine inspections, check the lightning protection system by gently pulling on the securements and conductor poles. If they are loose or disconnected hire a licensed contractor to reattach them.
- If replacement or a new cable connector is required, install a closed loop connector rather than a conventional 3-prong connector. If the metal conductor cable becomes loose from its securement, it can be dragged or slammed against the roof membrane.

CLOSED LOOP CONNECTOR



3-PRONG CONNECTOR



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