Hail action plan

Property risk management guide
from Liberty Mutual Insurance

Survey facilities for damage. If damage has occurred, take photographs of the damage and contact the Liberty Mutual Claims Service Center as soon as possible.

- **Small business customers:** 1-844-325-2467 (1-844-3-CLAIMS)
- **Mid/large business customers:** 1-800-362-0000

Hail causes millions of dollars of property damage each year, and roofs and roof equipment are extremely vulnerable.

Because hail can occur with any strong thunderstorm, it is a threat nearly everywhere in the U.S. While hail storms cannot be prevented, there are certain steps you can take to help protect your facility and equipment from hail damage.

Hail preparation

Inspect and fortify your facility and outdoor equipment

Hail is well known for devastating crops, but can also cause severe damage to buildings, especially roof coverings and roof-mounted

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equipment, such as air conditioners, vents, cooling towers, skylights, and heating units. Damage to critical equipment can lead to utility loss and business interruption. There are several steps you can take to help protect your facility from hail.

- Install protective shields for rooftop equipment. The most cost-effective solution is a "hail guard." Currently, there are no testing standards for "hail-guards."

  To ensure you select the proper guard for your facility, consider the following:

  - Devices should include hood-type projections or screens that shield fragile condenser coils.
  - Steel or aluminum wire mesh supported on a steel framework and placed over the equipment with a maximum mesh size of one-inch. The wire size should be 11 gauge minimum and greater than 11 gauge for spans that exceed 6 feet.
  - Solid steel: Perforated steel plate where the smallest dimension of the perforation does not exceed one inch.
  - Plastic or semi-rigid materials, while not preferred over metal can be used. Contact the manufacturer to ensure the material is UV protected and resistant from rot, abrasion, or corrosion.
  - Consult the manufacturer prior to installing such devices to ensure that operating efficiencies or equipment warranties will not be affected.
- Install protective screens over skylights.
- Minimize and/or repair blisters in roof coverings and uneven ballast distribution. As the roof covering ages, this becomes more important.
- If you are building a new facility or considering reroofing, specify an impact-resistant roof covering or opt for a design using gravel, stone, or paving block ballast. Roof coverings are tested for impact resistance using Underwriters Laboratories test standard 2218, *Impact Resistance of Prepared Roof Covering Material,* and assigned a class from 1 to 4, with Class 4 having the most impact resistance. Class 4 products are recommended in hail-prone areas. (**Note:** For hurricane-prone regions, roof systems with ballast, stone, or gravel should be avoided.)
- If Exterior Insulating and Finish System (EIFS) wall coverings will be used in new construction or renovations, specify systems with a high impact resistance.

Protect your roof

For all types of roof coverings, regularly inspect your roof to keep it free of defects and in good condition. The type of roof covering influences the amount of hail damage that can be expected.

Smooth roof coverings: Smooth coverings, including single-ply and built-up coverings, are more susceptible to hail damage than those with gravel, stone, or paving block ballast. Single-ply coverings are used on more than 55 percent of commercial building roofs. Built-up coverings consist of multiple layers of roof felts laminated together with bitumen (tar or asphalt).

Light metal roofs: These roofs can be dented or even penetrated by large hail stones. The lighter the gauge of metal used the greater the susceptibility to damage.

Blistered roof coverings: Blistered coverings are more susceptible to damage. Blisters are raised bubbles of trapped air or vapor in the roof covering. They are more likely to form in warm weather when the sun warms the trapped air and it expands faster than it can escape. Blisters will often grow larger over time, leaving the covering above the blister unattached to the roof. Damage results from hail breaking the blister which allows water to penetrate the roof covering, resulting in leaks that can cause electrical damage, mold, etc.

Roofs with ballasts or uneven ballast distribution: This can leave the roof subject to scouring from high winds, leaving thin or bare spots over the underlying covering. Some cities regulate the use of ballasts in roof construction because they are often lifted off the roof by high winds, causing damage to nearby buildings.

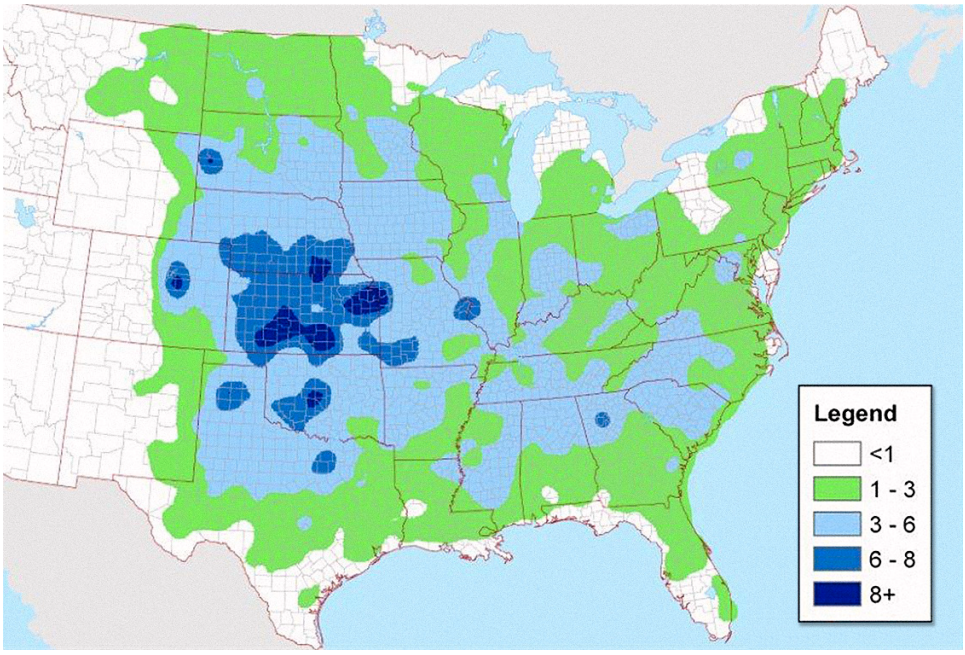
Hail information

Who is affected

Given the right conditions, hailstones can form at any time of the year in any location. In most parts of the country, hail season begins in March and typically extends into the summer months.

Data compiled by the National Severe Storms Laboratory stated that hail with a ¾ inch diameter is generally considered the minimum threshold for causing property damage. Most commercial roof systems experience damage by hail with as little as 1.25-inch diameter, and typical 3-tab asphalt shingles experience damage from hail as small as 1 inch. Hail up to two inches in diameter is not uncommon.

Hail activity in the U.S.



Average number of hail reports per 100 square miles

2003 to 2012 reports of hail one inch or larger

Image courtesy of Insurance Institute for Business & Home Safety. https://disastersafety.org

Additional resources

National Severe Storms Laboratory. www.nssl.noaa.gov.

UL 2218, *Impact resistance of prepared roof covering material.*

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