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Introduction

As spring approaches, so does thunderstorm season for the United States. With thunderstorms comes one of nature's more curious and destructive phenomena – hail. This whitepaper will explore what hail is, how to prevent hail damage, and how to identify and repair property damage caused by hail. We will also address what to look for in a reputable contractor to address hail damage that has occurred.

Basics of Hail

What is hail and is it different from freezing rain? According to the National Oceanic and Atmospheric Administration's National Severe Storm Laboratory (NOAA's NSSL), hail is a form of precipitation consisting of solid ice that forms inside thunderstorm updrafts. Hail can damage aircraft, homes and cars, and can be deadly to livestock and people. In contrast, freezing rain falls as rain and freezes as it falls in the lower atmosphere, closer to the ground. While hail can strike nearly every part of the country, it is particularly prevalent in the central states, where wide-open prairies and plains create ideal conditions for hail to form during storms.



HAIL ALLEY IS THE SWATH OF THE COUNTRY THAT IS MOST PRONE TO HAILSTORMS, AND TYPICALLY INCLUDES COLORADO, NEBRASKA, AND WYOMING*.

*NOAA NSSL

As small pieces of ice are cycled inside the thunderstorm, the ice grows as it rises from the storm and moisture on the surface freezes. Hail falls when the weight of it overpowers the updrafts of the storm, and gravity takes over. Hail can fall at incredible speeds depending on the size. NSSL estimates that hail over 4 inches in diameter can fall at speeds up to or even greater than 100 mph. The speed depends on the size of the hailstone, with smaller hailstones traveling slower and larger hailstorms traveling faster.

HAILSTONE SIZE	SPEED
< ONE INCH IN DIAMETER	FALLING BETWEEN 9 MPH TO 25 MPH
1-2 INCH IN DIAMETER	FALLING BETWEEN 25 MPH TO 40 MPH
2-4 INCH IN DIAMETER	FALLING BETWEEN 40 MPH TO 72 MPH



Hail Season

Ice falling at such speeds can cause a lot of damage, and subsequently, a lot of insurance claims. In the United States, hailstorms typically occur during the months of May to August. According to a study published by the American Meteorological Society in its Weather and Forecasting scientific journal, June is the top month for severe hail. This radar-based climatology study included data from 2007-2010.



TEXAS WAS THE TOP STATE FOR PROPERTIES AFFECTED BY HAIL DAMAGE IN 2020, FOLLOWED BY ILLINOIS, WITH ABOUT 1.5 MILLION AND 500,000 PROPERTIES AFFECTED, RESPECTIVELY *.

*ROCKY MOUNTAIN INSURANCE INFORMATION ASSOCIATION

Hail Damage and Risks

In addition to causing damage to the roofs of buildings, hail can blow horizontally, causing damage to siding, doors, and windows. Hail regularly damages cars as well. People and animals who are caught in hailstorms are at risk of injury, and the bigger and faster-falling pieces of hail can be deadly. It is best to make sure people and animals take cover in a hailstorm, and that vehicles are parked inside a garage or carport if possible.

What Hail Damage Looks Like

Hail damage can range from insignificant to incredibly expensive, and hail is an equal-opportunity destroyer, damaging cars, buildings, and landscaping. Animals and people caught in the storm are also at risk for their safety, depending on the size and speed of the hailstones. When a hailstorm strikes, it can leave startling amounts of distinctive damage. Cars parked outside will have pockmarked hoods and roofs, and spiderwebbed windshields and windows. The damage done to buildings is also fairly distinctive, usually leaving irregularly spaced pockmarks.



Some hail damage can be easy to spot, but areas like the roof or upper-floor siding may not be easy to see from the ground. It can be risky for untrained facility managers, business owners, or homeowners to climb ladders to get a closer look at these areas. To ensure safety, it is recommended that a licensed contractor—who has the correct safety equipment and training—ascends to those areas to inspect and assess hail damage.

For business professionals and homeowners who have the experience and equipment to self-assess their properties for hail damage, there are key things to look for:

ASPHALT AND COMPOSITION SHINGLES HAIL DAMAGE

- Random damage with no discernable pattern.
- Hail hits that are black in color.
- Loss of granules, which may expose the roof felt.
- Asphalt and/or mat that appears shiny.
- Hail hits that are soft to the touch, like the bruise on an apple.

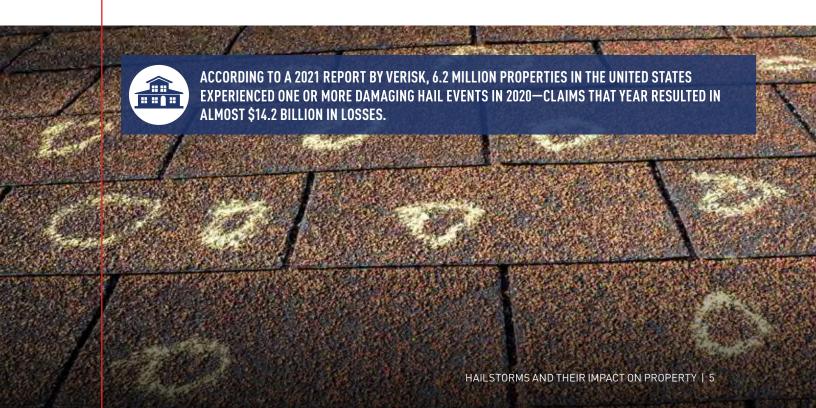
WOOD SHINGLES HAIL DAMAGE

- Random damage with no discernable pattern.
- A split in the shingle that is brown/orange in color.
- A split in the shingle that has sharp corners and edges.
- A split in the shingle that has little to no deterioration at the edges.
- Impact marks or dents along the splits.

For siding, the material involved can make spotting damage easier or trickier, as can the lighting and the time of day. Knowing which direction the wind was blowing during the hail storm can help narrow down the search to one specific area of a property.

Aluminum siding is the most likely to sustain serious denting and damage from hail, but wood and vinyl siding can also be damaged. Paint chips are a superficial sign of damage, but they can indicate cracks, holes, and dents, which are all common types of hail damage to siding.

Damage from hail needs to be addressed promptly in order to preserve the integrity of the envelope of the building. Cracks and holes in siding or roofing can lead to water leaks, insulation gaps, or avenues for pest intrusion, all of which can cause more expensive problems further down the line.



^{*}The above lists were compiled by Travelers Indemnity Group as an educational resource on identifying hail damage to two of the more common types of roofing.

Preventing Property Damage

With hail falling at high speeds and the unpredictable direction of hits caused by high winds, hail is a particularly destructive weather event. Preparation is the best line of defense to mitigate property damage due to severe weather. For hail, there are a few key takeaways to prepare your property:

- Inspect your roof regularly and invest in highly durable roofing materials. If there are any damaged areas on your roof already, hail damage will quickly make that damage exponentially worse. Repairing the roof, or replacing it entirely, with highly durable, impact resistant roofing materials can help prevent future damage from hail.
- Keep trees trimmed and gutters in good repair. The high winds that typically accompany a
 hailstorm can mean that dead, loose, or dying tree limbs and branches can get knocked or
 blown loose and turned into damaging projectiles. Similarly, a loose or full gutter can buckle
 under the weight and impact of hail.
- Plant a windscreen if your property doesn't have one. This can help soften the impact of future storms on your property.
- Secure and shelter outdoor furniture. This should only be done if there is no hail actively falling, so ideally before a storm kicks into gear. Hail that can damage your outdoor furniture can cause injury. Pots, vases, artwork, and furniture should all be secured inside a garage or shed, under an awning, or wrapped in protective coverings if possible.
- Invest in shutters and impact-resistant windows and siding. Because hail can cause damage from nearly every direction, protecting the sides of a building's envelope is a good step to take.



2020 HAD 4,611 MAJOR HAILSTORMS ACCORDING TO NOAA'S SEVERE STORMS DATABASE. IN 2019. THERE WERE 5.382 MAJOR HAILSTORMS.



Reputable Repairs

Repairing hail damage can be a lucrative opportunity for exploitative businesses who look to take advantage of those who are unprepared for dealing with a hailstorm.

The state of Colorado initiated a #NoRoofScam campaign due to the high volume of fraudulent roofers who attempt to prey on Coloradans in the aftermath of the state's many hailstorms every year. This campaign highlights the importance of hiring reputable contractors to do roofing repairs as part of disaster recovery efforts when a business or home has been damaged by hail. The state also provides tips to help homeowners and facility professionals navigate the ins and outs of hiring a reputable roofing contractor to repair the damages to their property.

The top tips from Colorado's #NoRoofScam campaign can be applied to roofing work done in any part of the country, not just Colorado.

- Get multiple estimates and references for the work needed before signing a contract.
- Reputable roofers do not conduct door-to-door solicitation after a storm.
- Check in on a business with the Better Business Bureau for any potential complaints or indications of a scam before hiring them.
- Confirm with your city or county that the contractor is properly and currently licensed
 to do roofing work in your area. Confirm that they are insured for the correct number of
 employees, rather than a low number this could indicate that they intend to hire unskilled
 temporary laborers who may not be licensed to do roofing work.
- Never pay in full or up front for contract work, and never sign a contract that is not complete.
- Review and understand all documents before they're submitted to your insurance provider.

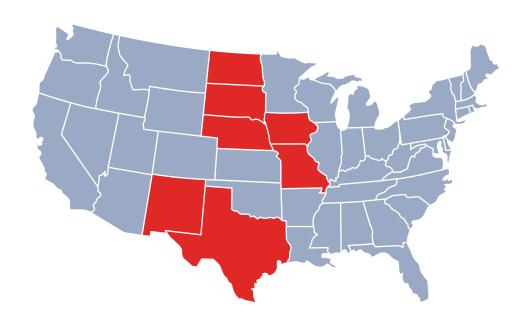




A reputable contractor will have no trouble providing you with the correct documentation and proof of certification, insurance, and licensing prior to conducting work on your property. There may be state-wide or regional roofing associations that can help you look into a company to be sure they are properly certified to perform the work you need completed.

Ideally, a property owner or manager will have established a relationship with a reputable disaster recovery firm before a storm rolls through. Doing the leg work to vet a contractor or disaster recovery firm in advance can save time and money after a hailstorm has damaged your property by streamlining the repair process and getting your property attended to quickly. Especially because storms will cause widespread damage, having a pre-existing emergency response agreement in place with a disaster recovery firm can help that firm prioritize your property and get repairs done guickly.

Having a disaster recovery firm selected in advance can also help streamline the insurance claim process. Knowing your selected firm can work with you and your insurance to adhere to insurance requirements for documenting and claiming damage can be an enormous help and save money for the property owner.



IN JULY 2020, SEVERE STORMS ACROSS THE CENTRAL PART OF THE COUNTRY CAUSED CONSIDERABLE HAIL DAMAGE IN TEXAS, MISSOURI, NEBRASKA, IOWA, SOUTH DAKOTA, NORTH DAKOTA, AND NEW MEXICO*.

*NATIONAL CENTERS FOR ENVIRONMENTAL INFORMATION. U.S. BILLION-DOLLAR WEATHER & CLIMATE DISASTERS 1980-2021 REPORT

Conclusion

While hail can be an unexpected and unpleasant part of a storm, there are ways to prepare and protect your property in advance. Maintaining your property well can be good prevention for storm damage, as can maintaining protective landscaping standards like having a windscreen. Knowing who to call to provide repairs is a crucial part of being ready to address hail damage. Finding a reputable disaster recovery firm who can repair roofing and address other aspects of hail damage is crucial to avoid scams and save time and money after the storm.





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