

Hail Size V. Typical Damage Summary

Cedar shakes and shingles perform well in hailstorms when compared to other products. Haag Engineering of Dallas, Texas has determined that cedar products receive only superficial marring from 3/4" (marble size) hail, while composition shingles are bruised, requiring product replacement.

Wood Roofs: Damage and Repair

Hail Characteristics

Section 5.3.5

Haag Engineering

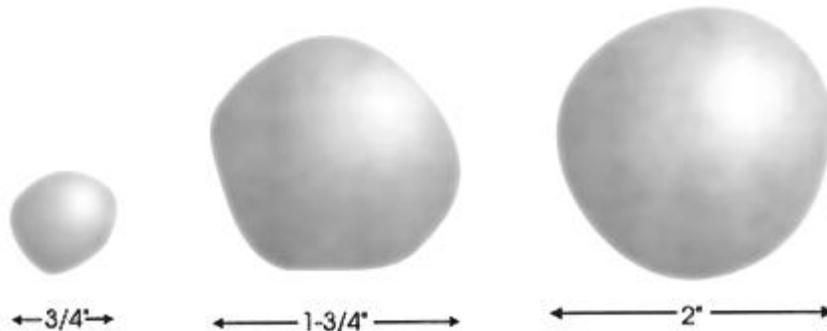
- Pea Size - (1/4")
Amount of roof damage -
None
- Marble Size - (3/4")
Amount of roof damage -
Minimal to wood
Composition shingles can be bruised or chipped
- Golf ball Size - (1-3/4")
Amount of roof damage -
Splitting of shingles and shakes begins
Severe damage to composition shingles

Haag Engineering has defined roof damage as follows;

Once a (composition) shingle has been bruised, a progressive deterioration ensues and culminates with a hole in the shingle. A puncture or "bruise" affects the water shedding capability and the long-term serviceability of a roof and, hence, is damage.

Hail impacting a cedar roof can cause damage if the hailstones are large enough and have sufficient densities, hardness's, and impact velocities to split the wood they strike. If a shingle (or shake) does not split when it is impacted, it is not hail-damaged.

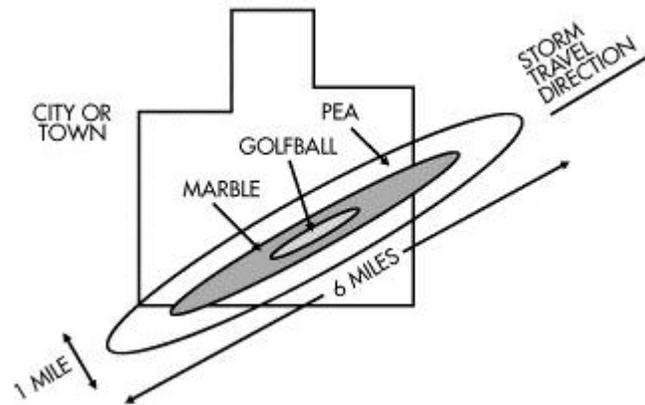
Further testing of cedar shakes has shown an even greater durability to hail. The tests conducted at Haag Engineering in January 1995 showed these quality heavy cedar shakes withstood impacts of 2" ice balls traveling at 71 miles per hour.



Haag Engineering also revealed the following from extensive research:

- Hail mark depressions, which do not initially cause a split, do not create a potential for future splitting.
- Most hail-caused depressions disappear with wood fiber recovery and natural weathering.
- Older but physically sound shingles are no more affected by hail than new shingles.
- Hail will not affect the natural weathering process of cedar shingles.

The opportunity for damage to asphalt shingles is significantly higher than cedar "since large size hail falls only in a small region of the total storm area" according to Haag Engineering.



There is no permanent visual damage to cedar when hail indentations occur. Indentations on wood shakes and shingles will recover and are unnoticeable after several months.

If required, repair of cedar roofs is easy and the product's natural coloring allows perfect matches. Cedar shakes and shingles do not have color coatings with varying color lots, as do virtually all other products.