

Hail Damages to Roof Systems #1 Hailstones and Composition Shingle Roofing Damages

Hail is a natural destructive force that can cause severe damages to residential, commercial and industrial roof systems. Analysis and confirmation of "true" hail damages must be performed by personnel with both technical training and extensive field training expertise of the natural and physical natures of both hailstones and roof systems.

Hailstones, both Large and Small, form into various shapes and sizes and typically fall with reckless abandon. Hailstones will also damage other exposed surfaces. Nonetheless, not all hailstones cause damages to roofs and do not cause damages to all exposed surfaces. Typically, not all marks found on roofing following a hail event are hail related.



Hailstones form in multitudes of shapes and sizes due to accretion and upper level air temperatures.

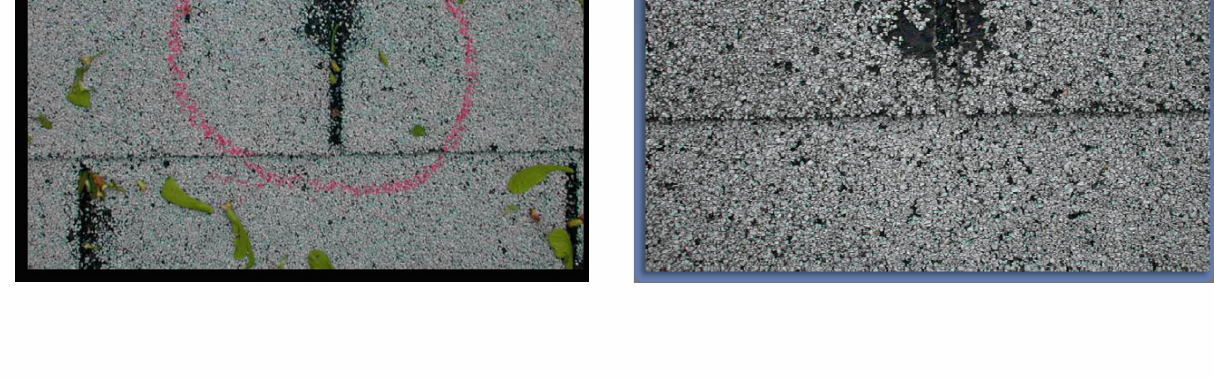
Hailstones densities also vary from virtual snow-balls to solid masses of dense ice.



Hailstones recovered from the April 10, 2001 hailstorm which devastated the northern St. Louis County Missouri area. The super-cell storm which spawned these huge hailstones cut a swath across the state of Missouri causing the single most costly hailstorm in history with over \$2 BILLION in damages.

Hail Damages to composition asphalt based shingles

Conjoined Impact damages in tab-slots occurring to adjacent shingles is a typical finding. These hail impacts have caused typical bruising and fracturing of the bitumen and reinforcing mats.



Unsupported roof edges are also vulnerable to "true" hail damages



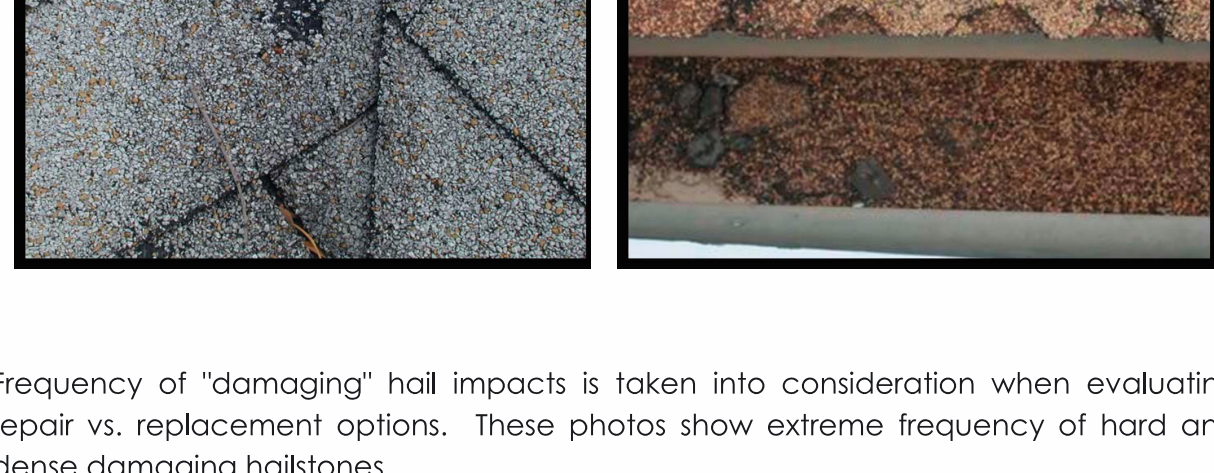
True hail impact damages will cause distinct impact compression marks which bruise the bitumen, fracture the reinforcing mats and cause significant and pronounced point impact granule loss which exposes the reinforcing mat.



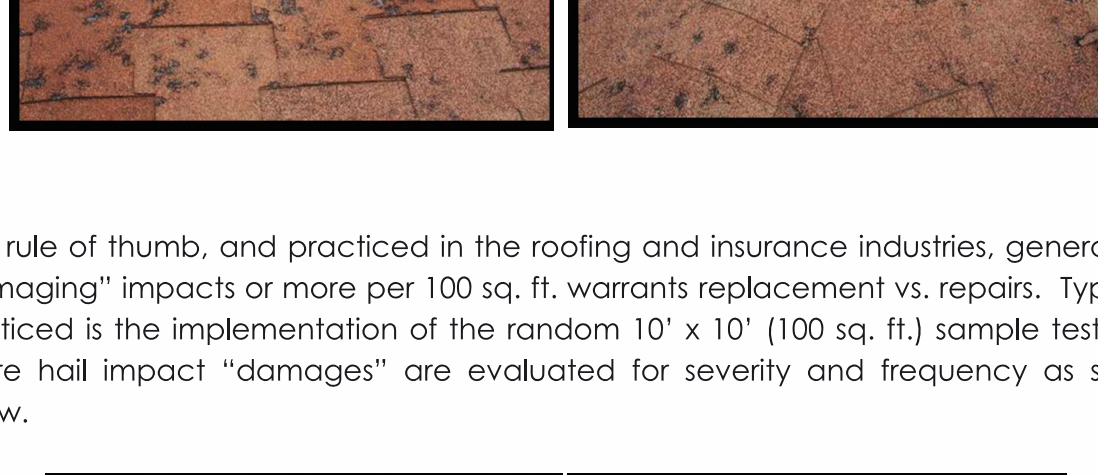
Ridge caps are also vulnerable areas which will typically demonstrate impact defects following a true "damaging" hail event.



Valleys as well as unsupported roof edges are also vulnerable to "true" hail damages.



Frequency of "damaging" hail impacts is taken into consideration when evaluating repair vs. replacement options. These photos show extreme frequency of hard and dense damaging hailstones.



As a rule of thumb, and practiced in the roofing and insurance industries, generally 10 "damaging" impacts or more per 100 sq. ft. warrants replacement vs. repairs. Typically practiced is the implementation of the random 10' x 10' (100 sq. ft.) sample test area where hail impact "damages" are evaluated for severity and frequency as shown below.

