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Revised:

EFFECTS OF HAIL ON ASPHALT ROOFING SHINGLES

Asphalt roofing shingles have historically demonstrated excellent performance in a variety of weather conditions; rain, sun, ice, snow, and sleet. Hail storms, however, may produce hail of sufficient size to cause visible damage to the shingles. Concerned homeowners/insurance adjusters are left with numerous questions about hail and how it may have affected the roof performance and/or shingle warranty. Limited asphalt shingle warranties generally exclude damage to shingles due to hail.

Hail damage can be divided into two categories: aesthetic and functional.

AESTHETIC

By far the most common type of damage caused by hail; small localised areas with minor loss of granules. This type of damage generally has little impact on the life of the shingle.

FUNCTIONAL

Functional damage is where there is sufficient damage to the shingles to either cause a short term leak or to reduce the life of the shingle. This type of damage is recognized by significant granule loss (easily visible from the ground, areas of asphalt becoming exposed) or shingle fracture/penetration which can be seen by fractures through the back of the shingle. Generally shingle replacement is only required in severe cases of damage. Remember that asphalt shingle applications provide at least two layers of shingle material over the entire roof.

There are many factors which affect the ability of the roof to withstand hail impact:

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| - Size and density of the hail stones | Large heavy stones will cause more severe damage. |
| - Age of the shingles | Newer shingles are more resistant than older shingles, as the asphalt is less brittle and better able to absorb the impact energy. |
| - Angle of the hail impact | Hail which strikes the roof at a 90° angle is more likely to cause shingle fractures, while hail that strikes the roof obliquely is more likely to result in spots of granule loss. |
| - Temperature | Colder temperature will be more likely to cause fractures as the asphalt will be more brittle than in warmer weather. |

- And roof deck conditions

Solid roof decks on moderately spaced trusses offer better support to the shingle surface in resisting hail damage. Shingles on rotted or flimsy decking can be more easily fractured.

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Canadian Asphalt Shingle Manufacturers' Association