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To: GAF Commercial Sales, GAF Contractors, Field Services, AIS, CARE

From: Technical Services Department

No: TAB-C-21

Hail Damage To Low-Slope Roofing Membranes

What Are The Most Common Types Of Damage From Hail?

Damage from hail storms is not only dangerous to public safety, but can also cause tremendous amounts of property damage. Some common types of damage from hail to low-slope roofs include:

- **Membrane Bruising...** from hailstone impact often creates a depression in the membrane surface, usually displacing protective surfacing such as gravel, ceramic granules or reflective coatings. Severe bruising can crush underlying insulation and seriously damage the membrane.
- **Fracturing...** the more severe the impact (typically related to hailstone size and velocity), the more likely the membrane will be fractured at the point of impact. This can be visible as a direct cut or puncture or may be hidden (latent) damage detectable only through sampling and lab analysis.
- **Granule / Surfacing Loss...** hailstones can scour a roof surface by displacing large amounts of protective granules or other surfacing.
- **Blistering / Splitting...** delamination between plies due to impacts, voids in or below the membrane, fracturing of inter-ply or reinforcing mats can result in future blisters, splits, cracks and other premature deterioration of asphalt, modified bitumen and certain composite type single ply roof systems.
- **Moisture Entry...** immediate damage may include cuts, punctures, tears or other damage allowing water to enter the roofing membrane and building envelope.
- **Metal Work / Skylights / Equipment...** hail damage typically includes varying amounts of denting and impact damage to roof mounted fixtures, metal work and equipment which can result in leaks.
- **Latent Damage...** can be present even when visual examination does not locate significant observable impact evidence. Damage can be hard to spot on certain types of roofs or can appear relatively minimal yet eventually cause early deterioration of the roof system. Sampling may not locate areas where damage is present.

Inspection Recommendations...

GAF recommends property owners document all storm related damage, collect local weather service data and notify their respective insurance carrier as appropriate regarding filing of future claims on any roof subjected to a hailstorm. In addition to documenting the hail event, steps that should be taken include:

- **Visual Inspection...** GAF recommends an on-the-roof visual examination as soon as practical after a storm event to determine whether hailstone impact damage is observable in the roofing membrane, surfacing, underlying insulation (latent impact

dents), composition flashings, rooftop equipment, metal work and roof mounted fixtures. OSHA safety requirements need to be followed when walking on any roof.

- **Documentation...** Inspection should record instances of visible damage located throughout the roofing system with photo documentation.
- **Courtesy Inspections on GAF Guarantee projects...** GAF will provide a courtesy visual inspection upon written request by the Building Owner for roofing installations covered by a GAF Diamond Pledge™ Roof System Guarantee.
- **Cut Tests and Lab Analysis...** GAF typically does not take field cut tests or perform laboratory analysis on hail damaged roofs. Where a more detailed sampling and analysis of roof system damage is needed, GAF will recommend field sampling by the property owner for testing at an accredited lab and will provide technical support for review of the results.

What Should Be Done To Repair Hailstorm Damage?

Emergency Repairs... the property owner should arrange for temporary emergency repairs to prevent further damage to the roof or building interior.

- Use a repair contractor certified by GAF.
- Notify GAF in writing as soon as possible if the roof is covered by GAF's guarantee.
- Use only suitable temporary repair materials and methods as recommended by GAF.

Permanent Repairs.... permanent repairs should be completed as soon as possible to reduce the potential for further damage.

- Permanent repairs are typically completed with materials to match the existing roofing system and usually require removal of temporary repairs and any wet or damaged areas.
- For roof membranes covered by a GAF roof system guarantee, follow GAF's requirements for repairs as required to restore guarantee coverage.
- Use only repair contractors certified by GAF.
- Roof systems not eligible for restoration of guarantee coverage may still be considered by the property owner for repairs after consideration of future service versus the cost of repairs.

Re-cover... where no more than one roof system is in place, many damaged roofs can be evaluated for installation of a re-cover roofing system avoiding the cost of tear-off and saving valuable thermal insulation. Damaged or wet areas must be removed and replaced prior to any re-cover installation.

Overlays... GAF does not generally recommend "re-capping" an existing hail damaged membrane with another ply of roofing material or cap sheet. Installation of additional roofing plies without proper separation between roofs usually results in moisture entrapment, blistering and premature failure of the overlay due to uncorrected deficiencies.



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*Does The GAF
Diamond
Pledge™ Roof
System
Guarantee
Cover Hail
Damage?*

No... leaks, defects or deficiencies in the roof deck or roof system caused by unusual weather conditions or natural disasters, including hail, are specifically excluded from coverage.

Questions?

GAF Technical Services Can Assist You... with these and other questions you may have regarding your new roof installation. Technical Support Services can be contacted at 800-766-3411. The GAF website is a great resource for just about any question you may have or for additional information you may require. Please visit www.gaf.com to find the latest information on our products and their installation.

Important: This document supersedes any prior GAF Technical Advisory Bulletins on this topic. Please always check www.gaf.com to make sure you have the most up to date information.