

Reflections on Low-E Glass vs. Vinyl Siding

From luxury vehicles melting on the streets of London to sunbathers being attacked by a “death ray” at a Las Vegas pool, splashy news reports highlight unanticipated hazards associated with the use of low-e glass in new construction. As more residential building codes mandate the use of low-e glass in residential construction, insurers have seen an increase in property damage claims allegedly caused by low-e glass windows – specifically the melting and distortion of vinyl siding. These losses may present potential for subrogation.

What is Low-E Glass?

Low-emissivity glass, also known as low-e glass, gained popularity in both residential and commercial construction due to its ability to control heat transfer through insulated windows. Low-e window glass is coated with a thin layer of metal or metallic oxide. Visible light passes through the glass but the metallic layer blocks the passage of heat inducing ultraviolet light into the home. Low-e glass windows keep the home cooler in the summer and warmer in the winter thus reducing energy costs. In certain circumstances, these windows can act like a magnifying glass reflecting sunlight in focused beams that can exceed 200°F. Vinyl siding melts at 160 to 170°F.

Concavity in Double-Paned Windows Using Low-E Glass

Variables contributing to damage caused by low-e glass windows include the concavity of the glass, angle of the sun, proximity to a neighboring structure, and buffering objects such as foliage. Glass concavity appears to be the necessary requirement for low-e glass to cause property damage. Low-e glass windows develop concavity when the glass warps due to an imbalance in the air pressure between the interior and exterior panels of glass. Builders can mitigate the potential hazardous effects from warping by considering sun angles and planting trees between neighboring properties. Manufacturers can prevent warping by installing capillary tubes to regulate pressure between the window’s interior and exterior glass. In 2014, in response to reports from property damage caused by low-e glass windows, North Carolina passed a rule that allowed builders discretion in the previously mandated use of low-e glass windows. After an aggressive push by the architect and fenestration (window and door) lobby, North Carolina reversed the rule and re-instated the mandatory use of low-e windows in new residential building.

Subrogation Potential

As to be expected, neither the window manufacturers nor the vinyl siding manufacturers believe they are accountable for these damages. Both point the finger at each other or blame the builder for the positioning of the windows. Builders have little discretion on the type of windows they use due to building code requirements and will likely rely on those requirements to avoid liability.

Additionally, almost all major manufacturers have included standard exclusions in their warranties disclaiming any responsibility for failures in their product due to distortion or melting as a result of reflections from windows and doors.

When reviewing low-e glass losses assess the impact of the angle of the sun, closeness to neighboring structures and concavity of the glass. The viability of achieving recovery on these claims is likely to depend on the controlling product liability statutes and common law negligence in the jurisdiction in which the loss occurs.



Zachary V. Renegar

Member

zrenegar@cozen.com
Phone: (704) 348-3446
Fax: (704) 334-3351

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