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## ***WINDSHIELD REPAIR PROCEDURES DON'T POSE INJURY RISK IN NONCOLLISION IMPACTS***

Auto windshield repair procedures don't pose a safety risk to occupants of vehicles in subsequent, noncollision impacts. An Institute study shows that a concern raised by the National Glass Association (NGA) isn't valid — namely, that previously damaged windshields exposed to atmospheric conditions are more likely to dislodge, or spall, glass inside the occupant compartment when the damaged area is struck by gravel or other road debris.

Auto windshields are made of high-penetration-resistant glass, a laminated assembly of two glass layers with a polyvinyl butyral interlayer. If the outer glass layer sustains minor damage, it often can be repaired by injecting clear resin into the cracks. Based on its tests, NGA claimed that if moisture reaches the interlayer through the damaged outer layer of glass before repairs are made, glass/interlayer adhesions could be compromised. This led NGA to conclude that in “a windshield with a defect that extends to the interlayer, a potential risk due to glass spalling exists to the vehicle's occupants should the area around the defect be impacted. Repair of the defect does not eliminate this risk.”

To determine the extent, if any, of an injury problem associated with dislodged windshield glass in noncollision events, Institute researchers reviewed available medical and automotive literature. Contrary to NGA concerns, no cases were identified in which glass dislodgment resulted in injury. Despite this lack of evidence of an injury problem, an investigation was conducted of the effects of moisture exposure on damaged windshield glass.

Many of the tests conducted by NGA were based on American National Standards Institute procedures, which are severe but not representative of real-world damage, exposure, or impact conditions. Using whole windshields instead of small sections and high-speed impacts with steel balls designed to simulate severe impacts from road debris, Institute researchers studied whether exposure to moisture results in greater risk of glass spalling. Results show the risk of interior windshield glass spalling from impacts with road debris doesn't increase when damaged windshields are exposed to moisture — even extreme exposure — if the exposure and subsequent impacts are realistic. Entire windshields with repairable damage to exterior glass layers were immersed in water for one week. Subsequent impacts from the steel balls were no more likely to cause interior glass spalling in the soaked windshields than in similarly damaged comparison windshields that hadn't been exposed to moisture.

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