

Roof Crush and Occupant Ejection Injuries in Georgia Rollover Accidents

When the Vehicle's Crashworthiness Becomes Part of the Case

A [rollover crash](#) can create two very different questions. The first is why the vehicle rolled. The second is how well the vehicle protected the people inside once the rollover began. If the roof intrudes deeply into the occupant compartment or someone is partially or completely ejected, the investigation shouldn't stop with the driver who triggered the crash.

A crushed roof doesn't prove a design defect by itself. Rollover severity, terrain, vehicle speed, the number of quarter-turns, restraint use, window and door performance, and the vehicle's structure all matter. But significant roof intrusion can raise a separate crashworthiness question: did the vehicle provide the level of occupant protection that a reasonably designed vehicle should have provided under the circumstances?

At the [Law Offices of Gary Martin Hays & Associates, P.C.](#), our Georgia rollover accident lawyers look at both sides of that sequence. When the evidence supports it, a claim against the negligent driver can exist alongside a [product liability claim](#) involving the vehicle manufacturer or another responsible company.

Modern Vehicles Are Tested Under a Stronger Federal Roof Standard

The federal roof-strength rule has changed over time. Modern passenger vehicles covered by [Federal Motor Vehicle Safety Standard 216a](#) are subject to an upgraded roof-crush test intended to reduce deaths and injuries caused by roof intrusion during rollovers. Older vehicles may have been certified under an earlier version of the federal standard, so the model year matters.

For vehicles weighing 6,000 pounds or less, FMVSS 216a requires the roof to withstand a test force of up to three times the vehicle's unloaded weight, with limits on how far the test device can move and how much force reaches a headform positioned inside the occupant compartment. Different force requirements apply to covered vehicles above 6,000 pounds.

The federal test is important, but it isn't the entire product-defect analysis. The [Insurance Institute for Highway Safety](#) previously ran its own roof-strength test and required a strength-to-weight ratio of at least 4 for a good rating. IIHS eventually discontinued that test because virtually all newer vehicles were earning good ratings after the upgraded federal standard phased in. Historical IIHS data can still be useful when an older vehicle is involved.

A vehicle's compliance with a federal minimum is evidence worth considering. It doesn't necessarily answer whether a particular design was reasonably safe under Georgia law.

A Roof-Crush Investigation Looks Beyond the Final Shape of the Vehicle

After a violent rollover, photographs of a flattened roof can be compelling. An engineer still needs to determine how that deformation occurred and whether it points to a design problem rather than simply reflecting the severity of the crash.

Some of the most important questions include:

- **The Vehicle And Model Year:** Which roof standard applied when the vehicle was manufactured, and are there NHTSA recalls, technical service information, prior tests, or other records involving the same platform?
- **The Crush Pattern:** Which roof pillars bent or buckled, how far the roof intruded, and whether the deformation reduced the survival space around the occupants.
- **The Rollover Sequence:** How many times the vehicle rolled, which surfaces it contacted, whether it struck another object, and how the ground or roadway loaded the roof.
- **The Restraint And Ejection Path:** Whether the belt, seat, door, side glazing, side-curtain airbags, or other systems affected the occupant's movement inside or outside the vehicle.
- **A Feasible Safer Design:** Whether engineering evidence shows a practical alternative roof or restraint design available when the vehicle was manufactured that could have reduced the risk of the injury.

Occupant Ejection Changes Both the Injury and Liability Analysis

Being thrown partly or completely from a vehicle during a rollover creates an extraordinary risk of serious injury. An occupant can strike the roadway, become trapped between the vehicle and the ground, or suffer multiple impacts during the rollover sequence.

The resulting injuries can include [traumatic brain injuries](#), spinal injuries, fractures, crush injuries, internal trauma, and other [catastrophic injuries](#) that may require surgery, rehabilitation, assistive care, or long-term changes to work and daily life.

But an ejection doesn't tell investigators, by itself, why the occupant left the vehicle. The analysis can involve restraint use, belt performance, door opening, broken side glass, roof deformation, seat movement, occupant position, and the sequence of impacts. Those details matter because a manufacturer may argue that the injury came from the rollover itself or from the occupant's movement rather than from a defect in the roof or restraint system.

Georgia Seatbelt Evidence Creates a New Issue in Ejection Cases

Georgia changed an important rule in 2025. Following Senate Bill 68, [seatbelt evidence can now be used in Georgia car accident cases](#) in ways that were previously prohibited. A defense may argue that failing to use an available belt made an ejection injury worse and should reduce damages.

That makes careful reconstruction even more important. A rollover case can't simply label someone "unrestrained" and stop there. Investigators may need to determine whether the belt was available and functional, whether it was being worn correctly, how the restraint system performed, and whether roof, door, glazing, or seat failures still contributed to the injury.

The same evidence can cut more than one way. A manufacturer may focus on belt use, while the injured person may need engineering testimony showing that the occupant compartment

or ejection-mitigation systems failed to perform reasonably even after the restraint evidence is considered.

Georgia Design-Defect Law Doesn't Stop at Federal Compliance

Georgia's product liability statute, [O.C.G.A. § 51-1-11](#), allows claims against manufacturers when a defective product causes injury. For design-defect claims, the Georgia Supreme Court's decision in [Banks v. ICI Americas, Inc.](#) uses a risk-utility analysis that looks at the reasonableness of the design decision.

That analysis can consider the seriousness and likelihood of the danger, the usefulness of the design, the state of the art, and whether a safer practical alternative was available when the vehicle was manufactured. The question isn't simply whether the roof passed a government test. It's whether the design was reasonable when its risks and available alternatives are considered together.

That distinction can matter in an older SUV or pickup whose roof technically complied with the rule that applied at the time but performed poorly in a real rollover. Compliance can help the manufacturer, but Georgia law does not automatically make regulatory compliance the end of a design-defect claim.

Gary Martin Hays on Finding the Real Cause of a Structural Failure

The need to investigate the failure itself, rather than accept the first explanation, is a point [Gary Martin Hays](#) has made in other catastrophic structural-failure cases. After the [Sapelo Island gangway collapse](#), he said, "Whether it was a design flaw, a maintenance issue, or some other factor, these families deserve to know the truth."

A serious rollover requires that same discipline. The fact that another driver triggered the rollover doesn't answer whether the roof, doors, glazing, or restraint system made the injuries worse. Those are separate questions, and the physical vehicle may hold the best evidence for answering them.

Five Steps Can Protect the Vehicle Evidence Before It Changes

A roof-crush claim can become much harder to prove once the vehicle has been repaired, dismantled, or sent to salvage. Early preservation gives engineers the chance to examine the actual structure rather than relying only on a handful of post-crash photographs.

- 1. Preserve The Vehicle In Its Post-Crash Condition:** Written notice should identify the vehicle and request that the owner, insurer, tow yard, or other custodian not repair, alter, dispose of, or destroy it before an inspection can occur.
- 2. Photograph The Entire Vehicle Before Anything Moves:** [Detailed photographs](#) of the roof, pillars, doors, windows, interior, seats, restraints, tires, and underbody can preserve conditions that may change later.
- 3. Download Available Crash Data:** When the vehicle contains a compatible event data recorder, the download may provide crash-related information such as speed, braking,

change in velocity, or restraint-system status, depending on the vehicle and the data recorded.

4. Inspect The Roof And Restraint Systems Together: A crashworthiness engineer may need to evaluate pillar deformation, welds, roof rails, seats, belts, airbags, doors, and glazing as one occupant-protection system rather than treating the roof as an isolated component.

5. Research The Vehicle Platform: Recalls, NHTSA investigations, prior testing, historical IIHS ratings, technical documents, and evidence of similar failures can help determine whether the problem was unique to this crash or part of a larger design issue.

Punitive Damages Require More Than Proof of a Weak Roof

A serious design problem doesn't automatically create a punitive-damages claim. Georgia requires clear and convincing evidence of aggravating conduct such as willful misconduct, wantonness, or an entire want of care showing conscious indifference to consequences. Mere negligence isn't enough.

In a vehicle-defect case, that can make internal testing, engineering analyses, prior similar incidents, recall discussions, and corporate decision-making important. If the evidence shows only that a safer design might have existed, the case may support compensatory damages without supporting punitive damages. If the evidence shows much more, the analysis can change.

Our Georgia Rollover Accident Lawyers Can Investigate the Vehicle, Not Just the Driver

If you or someone in your family suffered serious injuries in a Georgia rollover and the roof collapsed or an occupant was ejected, [contact us](#) before the vehicle is repaired or released for salvage. Preserving the vehicle early can give reconstruction and crashworthiness professionals the evidence they need to determine whether the injuries were made worse by a defective design.

Since 1993, we've recovered more than \$1 billion for injured Georgians and their families. We handle serious car accident and product liability cases on a contingency fee basis, so there's no upfront attorney's fee and you don't pay us a legal fee unless we recover compensation for you.