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Report prepared for: The Connecticut Department of Consumer Protection
Automotive Glass Work and Flat Glass Work Examining Board
Richard Hurlburt- Director of Professional Trade Division
Steven Rutstein- Assistant Attorney General, Antitrust/Consumer Protection
Edwin Rodrequez- Commissioner

WINDSHIELD REPAIR

PROTECTS
&
PRESERVES

THE

FEDERAL MOTOR VEHICLE

SAFETY STANDARDS

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The U.S. Department of Transportation mandates that all new vehicles pass Federal Motor Vehicle Safety Standard (FMVSS) performance tests. These tests ensure vehicles maintain a minimum safety standard. Standards concerning windshields are:

FMVSS 212 measures windshield retention in a barrier crash. Every make and model vehicle is accelerated to 30 mph and crashed head-on into a concrete barrier. The automobile must retain 75 percent of the windshield along the pinchweld perimeter. Some vehicle manufacturers require 100% retention in this severe crash test.

FMVSS 216 is the roof crush performance test. It measures the structural strength required to protect occupants in the event the vehicle rolls over. One and one-half times the unloaded vehicle weight or 6,000 lbs. (whichever is less) of force is applied at an angle to the roof. The roof structure can depress no more than five inches to pass. Note: the windshield provides 30-70% of the roof strength.

FMVSS 208 occupant crash protection specifies equipment requirements for active and passive restraints, including air bags. There can be no separation of load-bearing safety assemblies in a 30 mph barrier crash. This pertains to the windshield because the passenger side air bag deploys off the windshield in order to perform its safety function.

Windshield Repair protects and preserves these safety standards by preventing a windshield replacement from altering the original factory installation.

The Motor Vehicle Act, Section 1397 (a2a) states "No...dealer...or repair business shall knowingly render inoperative, in whole or in part, any device or element of design installed on or in a motor vehicle." In plain words, replacement shops must restore vehicles to their original, safe condition.

The National Glass Association states that, ”proper windshield installation is as important to your safety as seat belts, airbags and anti-lock brakes.” Windshield replacements per the Independent Glass Association, National Glass Association, and ABC’s 20/20 and Fox News are known to be done incorrectly 70%of the time.

All of the windshield lawsuits to date were from deaths and injuries caused by a replacement eliminating and/or compromising one or more of the FMVSS.

Logically speaking the safest solution to this problem is to <u>prevent the replacement as often as possible</u>, which is what windshield crack repair does. Limiting windshield crack repair to six inches is ludicrous because over 90% of repairable cracks are over six inches. Cracks up to at least 12 inches long must be repaired in order to prevent most windshield replacements. Note: Lab tests submitted show there is no difference between a six inch versus a twelve inch long crack repair.

The federal required tests for the windshield itself are the SAE/ANSI Z 26.1 Tests. Windshield Crack Repair passes these tests. There is no known injury lawsuit ever from a windshield repair in the 31-year history of the industry.

From The Independent Glass Association:

Article Source: Auto Glass Specialists Fact Sheet, November 2002
Why Safe Installation Practices are Important

AIRBAG PERFORMANCE
Airbag timing - As part of a vehicle's structure, the windshield is a critical determinant of proper airbag timing. In a crash, an improperly installed windshield may cause an airbag to deploy too early or too late. In either case, the safety of the occupants may be compromised.
Airbag retention - On impact the windshield acts as a brace to support the passenger side airbag. If the windshield separates, the airbag does not have a constrained space, and it is not effective in protecting the occupant.

OCCUPANT RETENTION
The windshield is intended to keep unrestrained occupants inside the vehicle. In a crash, an improperly installed windshield may fail to hold and detach from its frame, allowing any passengers in the vehicle to be ejected, which increases each occupant's chances for serious or even fatal injuries.

VEHICLE STRENGTH
Structural Integrity - The windshield is an important part of a vehicle's energy management systems, which directs crash energy around the occupant compartment. If the windshield is improperly installed, the vehicle may crumple differently than the manufacturer intended, which may jeopardize occupants.
Rollover Strength - In a rollover accident, the windshield provides strength by helping to keep the roof from crushing in on any vehicle occupants. In some model designs, the windshield supplies up to 50% of the vehicle's rollover strength.

AUTO GLASS AMERICA

Special Report: 7 Out of 10 Windshields Are Installed Improperly. How You Can Beat the Odds

It's a fact. 7 out of 10 windshields are installed improperly, according to industry statistics. The risk that drivers are taking which, they are not even aware of is astronomical. The risk could easily with that used car you bought, which has an improperly installed replacement windshield, or it could be that nice guy that installs windshields and lives in your neighborhood but who does not follow safe replacement standards. Make sure these 6 common mistakes are not made on your windshield installation. If you don't, you could be risking your life in an accident.

The most common mistake is not using the proper urethane adhesive. Different vehicles require different types of adhesives and your installer may not be aware of it. When the weather gets under 40 degrees, a special cold weather urethane must be used for proper adhesion. Many glass shops don't bother to use these more expensive yet proper materials to hold your windshield in. They are risking your life, not theirs.

Something as simple as a clean glass is critical. Installers must make the time to clean the bonding edge of the glass with a residue free glass cleaner and clean paper towel. This takes only 2 minutes, yet some installers forget it every day.

Clean hands are just as important. When placing a windshield in the car, the installer's hands grasp the edge of the glass. This is where the glass bonds to the body of the car, and where oils or dirt can transfer from their hands to the glass easily. A new pair of disposable residue free gloves should be used on every installation. ……

Many glass installers don't take the time to use a pinchweld primer. When a windshield is removed, small scratches are made underneath the molding area and around the edge of the glass. The primer is used to make sure the urethane has a proper surface to bond to. Primer is also used to keep any bare metal scratches from turning into rust problems later. This is something that we see quite often on cars that have previously had windshields replaced prior. Somebody hasn't bothered to spend the 5 minutes and 15 cents it takes to make sure there will not be a rust problem a few years down the road. If the rust gets bad, the windshield will not have a safe pinchweld surface area to

bond to on the car. The result is a windshield that will not stay in the car during a bad accident. This puts the occupants at a serious risk.

Often customers are not informed of safe drive away times. Temperature, humidity and the type of urethane your vehicle calls for, all change the amount of time necessary for the urethane to dry safely. Installers are not always taught how to determine the safe cure time for windshield bonding. How can the customer be told if the installer doesn't know?

Source: www.crackedwindshields.com

Exhibit A is a photograph of a rollover accident with a 12-inch long crack repair. The driver was unharmed because all of the FMVSS were in place because the 12-crack repair prevented a replacement from altering the original installation. There is almost no roof crush and the repaired crack remained in tact, see the red arrows in the photo.

Exhibit B is an article from the March/April 2004 issue of the National Glass Association, Auto Glass Magazine, concerning the safety problems of windshield replacement, a list of lawsuits and the FMVSS.

Exhibit C is an article from Auto Glass Tech Center concerning the huge safety problem of pinchweld rust which occurs after most replacements in humid climates such as Connecticut. Pinchweld rust will cause failure of all FMVSS. (There is no pinchweld rust from a Windshield Crack Repair.)

Exhibit D are photographs of pinchweld rust taken by a two man replacement shop in Michigan, who said they see rust in 80% of replaced windshields

Exhibit E- is photographs of replaced windshields that failed FMVSS 216 and 212 during a rollover accident.

Exhibit F- is a FMVSS 208 and 212 failure in a frontal collision.

References

1. Essex-essexarg.com/Safety
2. National Glass Association, Auto Glass Magazine
3. Ultra Bond

Exhibit A -12 inch crack repair in a rollover accident, still bonded.

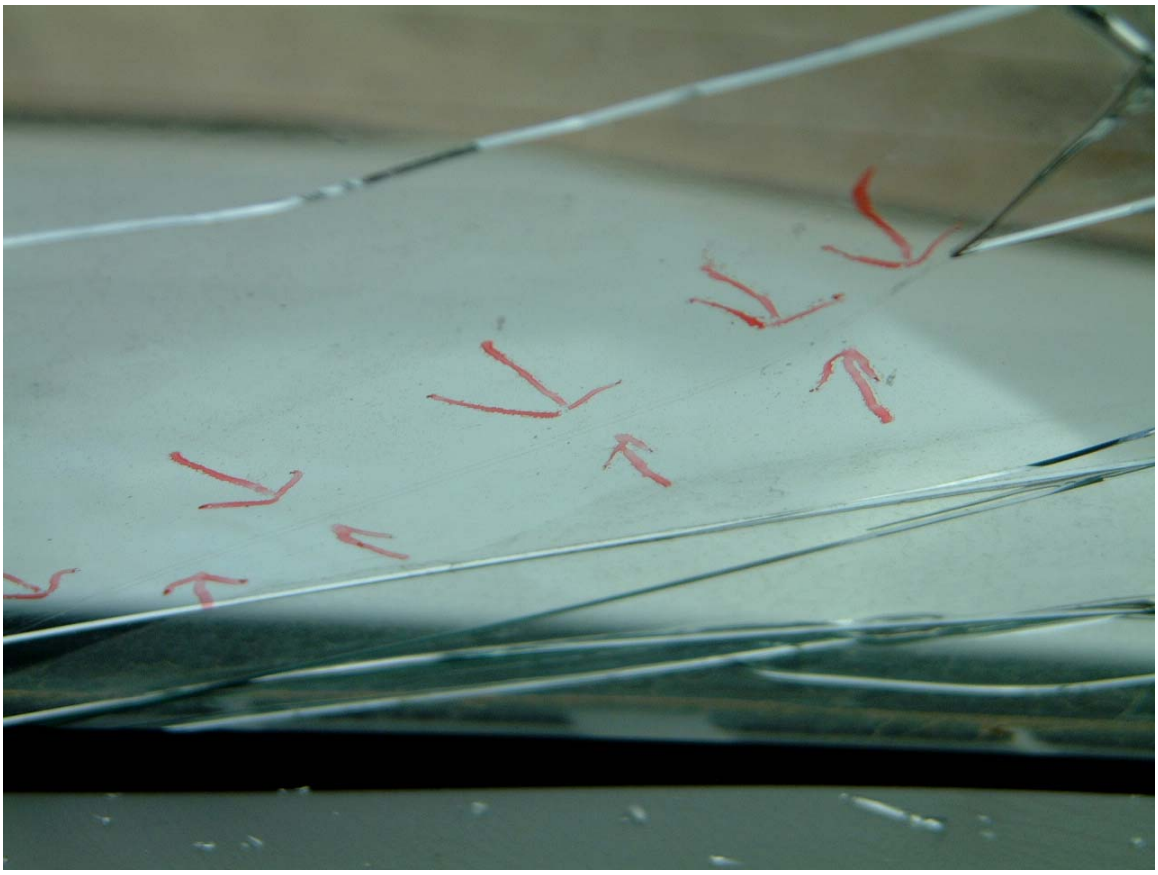


Exhibit A-1 side view, no roof crush

Exhibit A-2 - windshield

Exhibit B

AutoGlass Magazine, National Glass Association March/April 2004, pages 36-40

Weigh The Risks

Measure the consequences of on-the-job practices in terms of customers' safety
By David Eldredge

Can you name differences in the concerns that auto-glass installer's face in regard to consumer safety versus the concerns of an original-equipment manufacturer? Consider:

• Environmental conditions during installation
• Drive-away times
• Selection of glass and products, and the pre-testing they require.

Keep in mind that original equipment is regulated by National Highway Traffic Safety Administration and Federal Motor Vehicle Safety Standards, as stated in the U.S. Code, and the after-market is regulated by the ANSI/AGRSS 002-2002 Automotive Glass Replacement Safety Standard and the judicial system. In the ideal world, auto-glass replacement specialists want to follow what the OE engineers had in mind when they set specifications for auto glass and its retention. Yet aftermarket technicians face the above and other factors that influence their installations, factors few OE engineers consider when designing cars.
As a result, auto-glass installers occupy a fairly solitary niche when it comes to protecting themselves from the inherent risks of their profession. Let us consider each component that contributes to those risks. First, take the quick quiz below; then, read on.

Legal Precedents

Some of the most well-known lawsuits regarding auto-glass installation and replacement include the following, cited by consultant Bob Beranek of Sun Prairie, WI:

• George Miller v. Solaglas California, 1982, www.glasslinks.com/newsinfo/ppgcase.htm
• Giacomelli v. General Casualty & Dick Cooper Glass, 1992
• Rhyne v. Confidential, 1999, regarding a rollover accident, www.oreillylaw.com/vehicle.htm
• Donnett v. National Car Rental (General Motors Co.), 1998, a rollover accident, http://cibermex.hypermart.net/AVAG-FLASH/news.html
• Granada v. Ford Motor Co., 2002, also a rollover accident.

Three of the five made headlines. George Miller v. Solaglas California involves the notorious DW848 rubber-gasket windshield on a GMC pickup truck. Miller, the plaintiff, was rendered a quadriplegic "when another vehicle collided with the left rear of his truck, causing it to jump a curb and strike a metal light pole. The windshield, installed by a Solaglas facility in Colorado, "popped out" and Miller was ejected through the opening." In a second trial, the Supreme Court of California in Sacramento ruled that urethane should have been used in the rubber gasket.

"[The] second jury trial resulted in a judgment against Solaglas for $6.1 million, $5.1 million in compensatory damages and $1 million in punitive damages." The court concluded that Solaglas "purposefully performed with an awareness of the risk and in disregard of the consequences so as to constitute 'wanton and reckless conduct.'"

The Rhyne v. Confidential case made its way to ABC's 20/20 News Magazine in 1999. Tracy Rhyne's tragic fate was the result of many factors. One was the failure of her windshield during

a rollover, allowing the vehicle to collapse on Rhyne. She was awarded $2 million from the glass shop, of a total $8.75 million. She has since died due to complications from her condition.

The Donnett case made the front page of the Detroit News' Business section in 1998, and nears end during March. As the injured party has now passed away, this has become a "wrongful death" case. The accident took place approximately 24 hours after the installation. Sixty percent of the glass had not even made contact with the adhesive due to faulty installation. Another 20 percent had actually pulled loose, according to an expert witness.

The Giacomelli case also involved DW848 glass on a GMC truck that hit another vehicle. A child became injured when the truck rolled end to end and the driver of the second vehicle died.

The latest case, Granada v. Ford Motor Co., has not made much news. It also results from a failed windshield during a rollover. The failure was on the bonding surface of the glass. Details have been difficult to obtain; yet—in a surprise move—Ford Motor Co. prevailed. The judge concluded that the plaintiffs would have suffered the same level of injuries regardless of the condition of the glass.

There are many more cases where the parties have settled out of court with the promise not to disclose information.

Applicable Federal Standards

In nearly all court cases, judges and juries weigh the relevant industry standards. Only recently have they been able to refer to AGRSS. Therein, only two federal motor-vehicle safety standards apply to the proper retention of windshields and their contributions to safety.

FMVSS 212 states that 50 percent of the glass must be retained in the car body, with a passenger-side air bag, when hitting a stationary barrier at 30 miles per hour—and members of the AGR industry strive for 75-to100 percent retention in aftermarket crash tests.

The second AGRSS reference is FMVSS 208, pertaining to passive restraints. The air bag is one example of a passive-restraint system. If the windshield has not been bonded in properly or if the adhesive has not cured sufficiently or does not have the right amount of strength, the air bag will not function properly as the windshield is meant to be a wall or barrier to help position the air bag in place for the occupant. If the windshield is loose or has no retention, the air bag could force the windshield away from the car and the air bag will not be in position to protect the occupant.

Manufacturers Bear Liability

More liability rests on the nation's six major urethane manufacturers than on installers. With an estimated 20,000 U.S. installers, if one accident every year relates to auto-glass failure, each faces only one chance in 20,000 that the case will rest on him or her.

However, adhesive manufacturers face a one in six chance of having their products called into question, all things being equal. Interestingly, with about 11 million windshields replaced annually, the average installer does 2.3 installations every business day.

In proprietary investigations, Dinol researchers have interviewed many sheriff's deputies and

experts who write up reports or witness serious automobile accidents. In each case, they have all seen windshield failures. But not one of the people interviewed has written in the reports that windshields failed, not knowing at the time that the windshields could be evidence to injuries.

Thousands of windshields give way each year in accidents, perhaps some the results of faulty installations ignored due to a lack of public understanding. This, of course, may change through public education. **If law officers then begin to record more glass failures, installers and suppliers alike can probably expect a rise in the number of lawsuits.**

Next consider the various kinds of auto glass and their contributions to consumer safety. In the accident shown below, the back glass failed. Because back lites are tempered, they are not intended to maintain form or provide as much structural integrity to the car body. Tempered glass is only meant to reduce cuts and lacerations.

NHTSA officials have recently concluded that requiring lamination on back lites or auto glass other than windshields is cost prohibitive. Statistics documenting injuries with or without laminated glass are difficult to follow; making it virtually impossible to determine just how important laminated glass is for other sections of glass on cars. The only sure measurement, according to NHTSA officials, is the additional cost of laminating back lites or side glass.

At the same time, please note that Volvo engineers have already begun installing laminated auto glass throughout their vehicles, not just for windshields, even in the face of NHTSA officials' recent conclusion. Volvo designers may know something other car manufacturers wish to ignore.

Rollovers versus Collisions

An explanation of applicable Federal Motor Vehicle Safety Standards may help you weigh auto-glass installation practices in terms of customers' risk of injury or fatality during auto accidents.

- FMVSS 212 is a windshield-retention test usually conducted at 30 m.p.h. It calls for dummies seated in driver and passenger seats. The vehicle hits a stationary barrier and the windshield must remain in the car body with only a certain allowable lift or failure. In some specifications modified by the car manufacturer, dummies may not be seat belted.

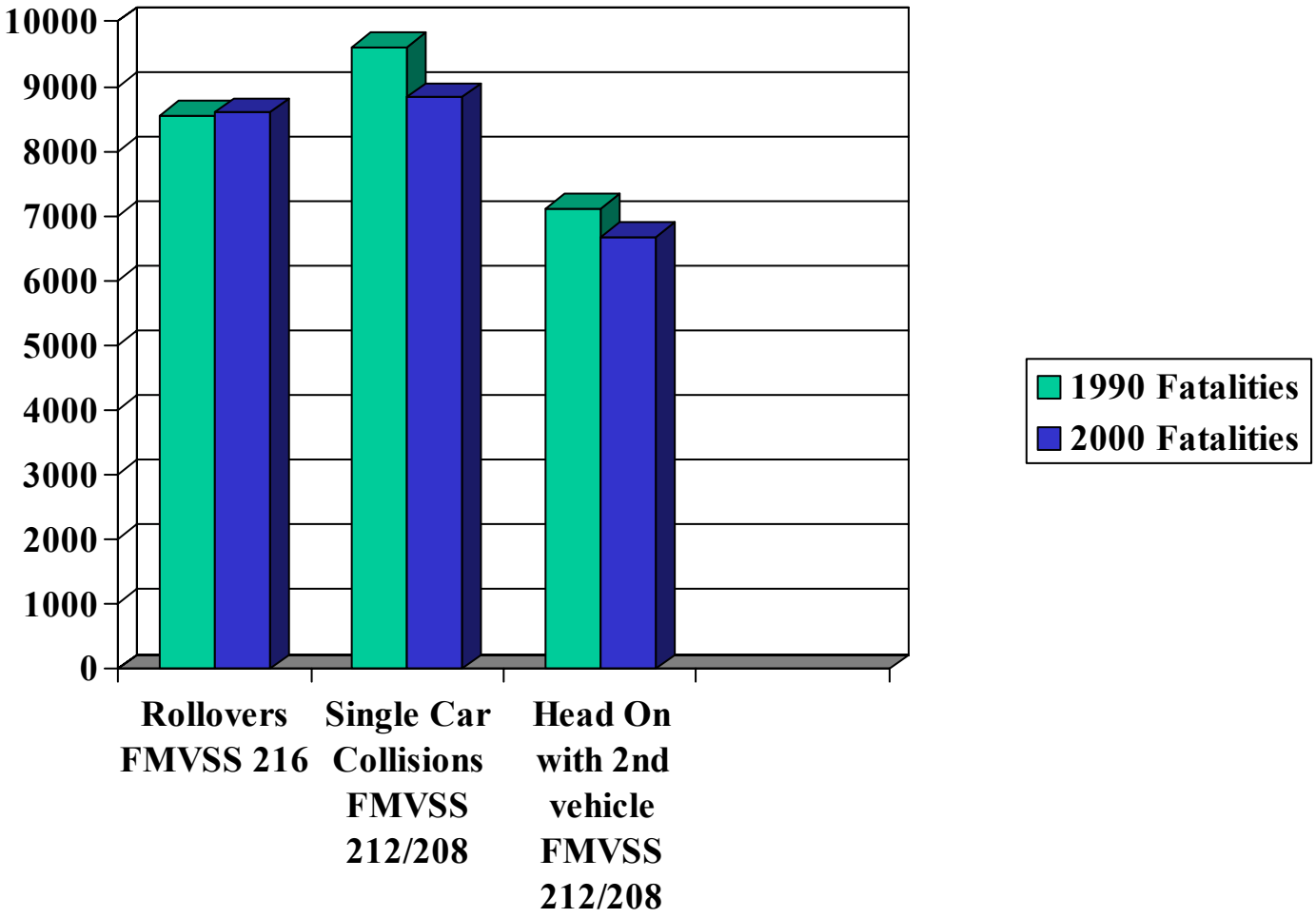
- FMVSS 208 measures the use and effectiveness of passive-restraint systems such as air bags. Because the passenger air bag in most vehicles deflects off of the windshield during an accident or collision, the windshield must be securely mounted. If the windshield does not have good retention, the passenger-side air bag may force the windshield away from the car and the air bag will not be in the proper position at the time of the impact and will not effectively protect the passenger.

- FMVSS 216 outlines the rollover or roof-crush test. The roof or cab of the automobile must not collapse or cave in more than a specified number of inches when a specified amount of weight is applied during the test.

And yet, according to the American National Standards Institute standard established by the AGRSS Council, FMVSS 216 is not applicable to the aftermarket windshield-replacement industry. This, even in light of court decisions establishing that windshields are required for certain vehicle types to maintain roof support during a rollover. Some vehicle manufacturers also document that a properly bonded windshield is required to pass FMVSS 216.

Properly installed windshields become matters of life or death when it comes to rollover accidents. As shown on the following graphs, the majority of deaths of vehicle occupants are a result of vehicle collisions, yet the numbers who die in vehicle rollover accidents equal more than one-third of the total number of fatalities from rollovers and collisions combined. In addition, the number of rollovers continues to increase.

Although these particular statistics do not reflect much information about windshield failure, we cannot ignore the fact that rollover accidents account for many fatalities. In these and presumably countless other instances, we cannot assume that windshields provide additional support in helping prevent the cars from caving in on the occupants or keep the occupants from flying out.

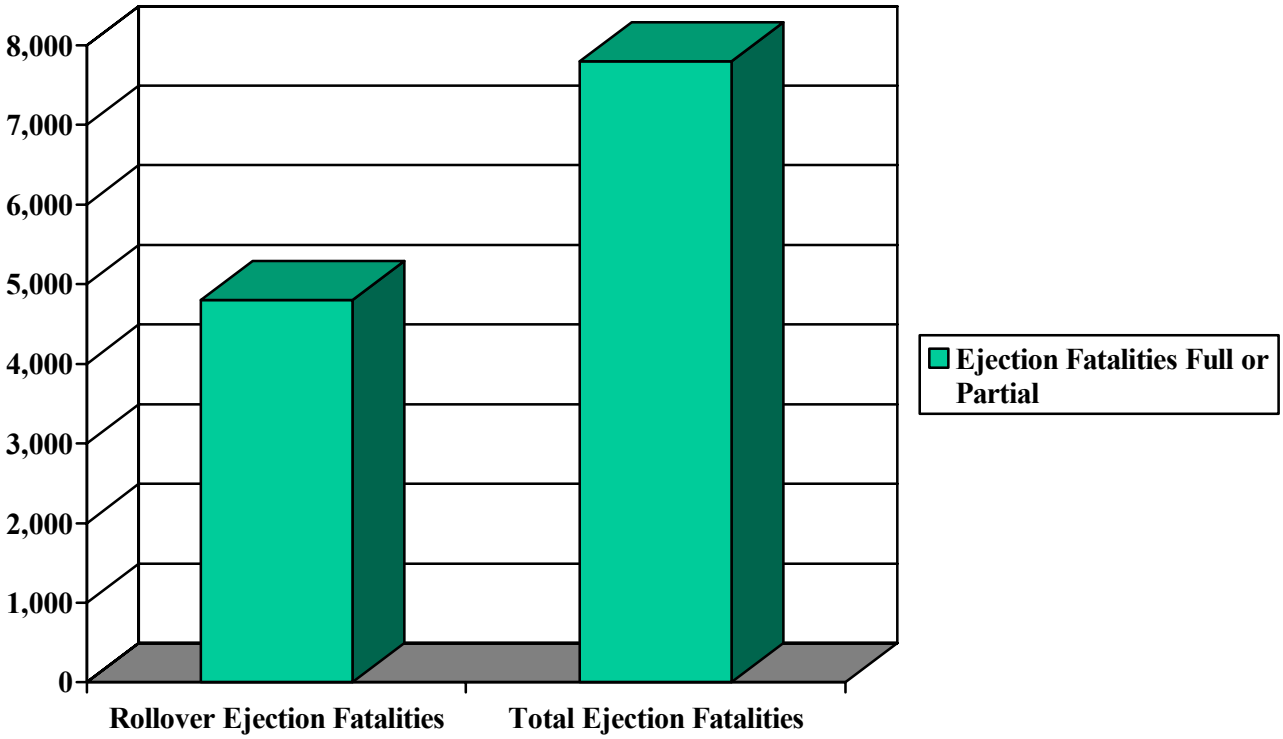


Drive-Away Times

Today, virtually all adhesive manufactures publish safe drive-away values that meet only FMVSS 212 and 208, primarily dealing with collisions. Adhesive manufacturers do not weigh the results of FMVSS 216 tests when they figure drive-away times because it seems impossible to test the strength requirement of adhesives for every vehicle. Also, many OE engineers agree that vehicle design should not include the requirement of a bonded windshield to pass FMVSS 216, although it does contribute.

Therefore, in measuring their risk of lawsuits, auto-glass installers face considerable uncertainty regarding FMVSS 216, especially because the most recent lawsuits against auto-glass installers and suppliers have been vehicle-rollover cases. That alone should be cause for concern.

Some auto-glass attorneys and their clients effectively point the finger back at OE engineers for not designing cars with stronger A pillars and overall cab strength. They suspect that trying to convince a jury that a piece of glass is supposed to support the car body might be taken as a joke and that car designers must know better. It is an OE issue, not an installation issue, they argue.



Ejection Fatalities

The back glass in the car shown on p. x is not required to be laminated by the U.S. Department of Transportation or NHTSA. If it had been required, it may have protected the victim in this case, who most likely was thrown out of the vehicle as it rolled. The front windshield, not shown, remained fully intact and protected the driver and front passenger.

“NHTSA officials still intend to consider a performance standard—a rule saying vehicles must be designed and built to prevent ejection during crashes. It would allow automakers to decide how to meet the standard. They might choose side air-bag curtains or advanced glazing or perhaps both.

“The combination is probably best,” Mike Sanders, president of the association and automotive market director for DuPont Co. in Wilmington, DE, recently advised in Automotive News. Sanders said that despite NHTSA’s conclusions, advanced glazing—going from tempered to laminated glass or even a stronger material—will be a cost-effective answer to the ejection problem.

About 7,800 people are killed each year from full or partial ejection through windows, 4,800 in rollover crashes, according to NHTSA research. Roughly 1,300 lives a year would be saved with advanced glazing.

The driver of the Toyota shown above was lucky. On Sept. 9, 2003, heading south toward Phoenix on I-17, he rolled three times. He was wearing his seat belt and the roof had substantial support. At least three factors kept the roof from caving in:

- Total weight of the vehicle
- Cab structure and A pillars sufficient to hold the weight
- Windshield retained in place, contributing to cab stability.

Another driver rolled a new Ford 350 pickup over in June 2002, just outside Tucson. The glass on the pinchweld was still intact and firmly bonded. Had this rollover accident not been too severe, the glass may have given additional support to the roof structure. This is a case where the OE designer could be to blame for not creating stronger roof support, or NHTSA standard

setters could be cited for not requiring higher standards for rollover protection. The total mass of this big truck was a major factor in the accident.

Put Risks in Perspective

Now look at safe drive-away times as one example of auto-glass installers' risk factors and compare them to another high-risk practice such as not properly removing contamination from windshields before applying adhesive.

Compare the practices of two fictional installers who have great ideas of making it big in the auto-glass market and who pride themselves on saving time for customers:
Sam of Quick Sam's Glass does everything by the book, except he lets vehicles go only a short while after installations. Sam uses only high-quality OE urethane, but it is not a product that will meet FMVSS until 48 hours after installation, on average.

Clint of Clean-n-Go Glass also does everything by the book. He uses a good fast drive-away product that meets FMVSS in one hour, and it is primerless. But Clint does not take the time to clean every windshield, as recommended by the manufacturer.

Taking the average, that of every installer doing two windshields every business day, the most cars Sam will ever have on the road with a potential for failure is, on average, only four. That average will not increase because every day two of the cars will reach safe drive-away time and every day he installs two more windshields.

Clint's risk will continue to add up every day and after every installation he does when he fails to take the time to properly prepare the glass and remove contamination. These risks will remain for the life of the glass.

After two years of installations, Sam, who chooses to ignore safe drive-away times, will, on average, have had four vehicles on the road every day that do not meet FMVSS. If Sam finds another career after, say, two years, the risk is gone within 48 hours of his last installation.

Clint's risk, on the other hand, continues to add up over time and will not go away until the cars he's worked on are dead or their windshields are properly replaced.

There are about 260 business days each year, times two years and then times that by two windshields installed by Sam and Clint. That equals 1,044 units for each negligent installer.

For Clint, let's assume that one of 50 windshields required special attention to remove film and could fail because the film was not removed. At the two-year mark:

- Sam's risk remains four of 1,044 and will be zero 48 hours after his last installation, if he stops his practice.

- Clint's risk would be 20 of 1,044 units and will not go away any time soon.

Try using this same logic with the other practices mentioned in the list on p. x.

Four-Point Risk Protection Plan
For the auto-glass installer, risks can be significantly reduced four ways:

1. Get as much education and certification as possible from the most credible sources.
2. Document all important details regarding installation religiously.
3. Seek good legal advice from a lawyer who knows the laws of your state.
4. Make sure your insurance is comprehensive and up to date, particularly liability insurance.

A prominent attorney who handled some of the cases described in this article once asked a group of auto-glass installers to view their work from the eyes of a jury. If you can meet the requirements listed in points one and two, he said, you will be a credible source to a jury. If not, you are a sitting duck. Take my advice and heed points three and four as well.

Exhibit C
Auto Glass Tech Center Knowledge Base

Topic:

Article By Mark Rizzi
ACR Glass

Does Close Cutting Cause Rust?

A short time back, Carolyn Rack of Beyond Parts and Equipment Magazine, (BP&E serves the automotive repair industry, with an emphasis on collision repair, including glass repair; 16,000 circulation, nationwide), called me and told me that someone she knows had removed a windshield from a vehicle and found a large amount of rust on the pinchweld of the windshield opening. Also noted: the windshield had been previously replaced by someone using the "close cut" or "shortcut" method. This was assumed to be the cause of the rust.

How, she asked, could the glass industry allow a practice that did such damage as to seriously compromise a windshield's ability to support the roof and retain the passenger-side air bag as the car manufacturer designed it to? After I'd explained, she said, sweetly, "That would make a terrific article! When can you have it ready?" To keep this as short as possible, I'll generalize as much as possible from all sources well as from my own views and practices. There's a wealth of information on the clos cut vs. full cut methods of windshield replacement.

Definitions

Close cut, or short cut, means removing a windshield by cutting as close to the glass as possible, leaving the original bead of urethane in place. The installer then puts a new bead of urethane on top of the original, and installs the new glass.

Full cut means removing almost all the original bead of urethane after the glass is removed, cutting as close to the pinchweld as possible and leaving a very thin layer of the original bead intact. Then a very much larger bead of new urethane is applied, and the new glass installed. Most major car manufacturers support and endorse the full cut method; some flatly reject close cutting.

Essex, manufacturer of auto glass urethane adhesive and OEM supplier to all major car manufacturers, favors full cutting. In my experience, Essex's efforts to provide information for the glass replacement industry is second to none, and the vast majority of cars come from the factory with Essex urethane under the windshield.**

The Rust Problem

On all installations, it's critical to re-prime every scratch and every bare area of ste that results as installers remove a windshield and prepare the pinchweld for installation. Only re-priming can seal the body and provide the best possible surfa for bonding again. Any exposed, unprimed area is a potential rust site. Unfortunately, many installers are too rushed to properly follow the strict guideline required for close cutting.

In my experience, the most common cause of rust is running a utility knife around the perimeter of a windshield to ease the cutout knife's passage through the old urethane. This scores the metal all around the perimeter and leaves an entire *circumference of potential rust problems*. Using a utility knife is a terrible practice that saves only seconds on the removal.

It takes only a couple of minutes to re-prime an exposed surface, but, again, many installers don't take the time, just don't care, or weren't properly trained in the first place. Many installers who think they're doing proper close cut installations are actually doing "fast-track" or "quickie" installations, again due to lack of training or lack of caring.

Bottom line: rust is due to very poor workmanship, no matter what the installation method.

Full Cut Advantages

Varying Curvature

The full cut method is generally preferred for many reasons. First, the curvature of the replacement windshield may not be identical to that of the original. This may cause stress breakage. Full cutting, plus the larger bead of fresh urethane that full cutting allows, helps to assure a windshield's proper fit despite any differences.

"Decking"

Second, a "decking" problem may occur with close cutting. When you stack urethane on top of urethane, the glass inevitably sits "higher" off the pinchweld. This, too, can induce stress breakage due to the fact that many vehicles' doors now close tightly to the windshield moldings at the A-pillars.

Urethane Compatibility

Third, urethane compatibility requires never close cutting on top of a prior close cut. For the reasons above, yes, but also because you're combining potentially dissimilar urethanes with no crash test data to assure that you're returning a vehicle to its original crash worthiness.

There are many ways to scratch the pinchweld down to bare metal when removing a windshield; realistically, it's almost unavoidable, but re-priming restores the bonding surface and restores the rust protection that was provided by the manufacturer. It is one of the single most important aspects of glass installation for the body of the car and the glass.

Critical Data

Installers must know the precise installation procedures required by the

urethane manufacturer whose product they're using, follow those guidelines to the letter, and document every installation with all aspects of the installation. These recorded facts, which should be saved for at least five years, are:

- All vehicle and owner data.
- Glass manufacturer.
- Urethane manufacturer.
- Lot numbers of urethane and primers.
- Shelf life of products.
- Pre- and post-work inspections.
- Proper urethane cure times.
- Customer acceptance and acknowledgment of all the above.

Cautions for Body Shops

If you allow outside vendors or installers to install windshields in your shop, insist that they give you this information. This will be your only protection when something happens. If work is done in your shop, you'll very likely be implicated in a lawsuit if a poor installation is ever determined to have caused injury.

Pay no mind to the fact that an insurance company may have sent the installer. You're the professional; you, not the insurer, are responsible to know what's best for people who have entrusted you with their car. If an installer won't give you this information, my humble advice is to find someone who will.

Watch the installation. Be sure the installer uses the products listed on the Service Record. It's fast becoming common knowledge lawyers are seeking victims ejected through windshield openings in collisions--glass that doesn't stay in the car in an accident. Multimillion-dollar liability is nothing to take lightly.

Three minutes' documentation per job is worth lots to you and your customers. Mark Rizzi owns ACR in Alliance, Nebraska; you may reach him at 308-762-3526
** For this reason I personally use only Essex Urethane.

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Exhibit D- Pinchweld rust from windshield replacement, which will cause failure of FMVSS.

Exbibt E- rollovers with replaced windshields that failed FMVSS 216 and 212

Exhibit F – FMVSS 208 and 212 failure-frontal crash with a blown out windshield