

INVESTING INTO PEAK PERFORMANCE

SOLUTIONS FOR MAXIMISING AUTO GLASS REPLACEMENT AND ADAS CALIBRATION OPERATIONS TO BOOST COMPETITIVE EDGE



EXECUTIVE SUMMARY

The replacement of windshields, and the way vehicles must be (re) calibrated is evolving fast. In this complex environment technology standard drive a significant shift at both windshield installation and recalibration of the advanced driver assistant systems (ADAS).

Modern passenger cars and commercial vehicles require a safer, more robust and efficient windshield replacement process. This paper provides auto glass companies, fleet operators and insurer solutions to achieve this, particularly when it comes to controllable elements such as the windshield replacement adhesive. We look at the current state of play in the market, delve into unique challenges the auto glass industry faces, with in-house and mobile installations, different climates and a vast number of different cars and ADAS systems creating a host of installation challenges.

The windshield ensures undistorted view. And it is one of the most important parts of a car because it is an integral part of a vehicle's safety system. Its role is to stay in place and keep occupants inside the vehicle in case of an accident. It not only serves as the backboard for the inflating passenger airbags, today's vehicles are stiffened by bonded windshields. It is vital that the windshield stays attached to the car body even in a rollover accident. If a windshield is not installed properly, it can come loose in a collision and separate from the car body flange, causing serious injuries.

We discuss solutions helping to ensure a safe, precise, robust windshield installation which meet automotive OEM standards based on peak performance helping to boost competitive edge of auto glass companies, fleet operators and insurers.



ADAS: IT IS CHANGING THE AUTO GLASS BUSINESS NOW

Since the auto glass business became a stand-alone industry and despite its high level of specialization in the past the auto glass business had relatively low barriers of entry and at times, incomplete information has been a challenge. The industry traditional risks have been influenced by the simple fact that they either required “really bad things” to happen or that it took months to see that the wrong installation caused leakages e.g. at a car wash or when it rains or an adhesive failure which can cause a massive safety risk. Wrong tools and pinch weld damage can result into corrosion. The usage of none qualified windshields and auto glass replacement adhesives with poor process handling can lead to come backs, safety risks and customer dissatisfaction. ADAS does increase the challenge of doing a good quality windshield replacement because it is not as simple as just replacing the glass.

Today's passenger cars and commercial vehicles are designed with lightweight materials and use cutting edge ADAS technology such as automotive imaging, LIDAR, radar or in-car networking. Such systems can prevent accidents from happening or at least actively help the driver to reduce the consequences of an accident. A correctly installed windshield supports the function of several safety systems such as cameras and the radar unit. Camera and radar are sensitive to optical and geometric tolerances, glass thickness and mass of the windshield. The software is fine-tuned for each windshield variant and demands extremely stringent optical tolerances to function as intended. These ADAS systems can be affected in case of the replacement of a windshield which is enforcing mechanical alignment adjustments.



Therefore, after the replacement and prior the vehicle being handed over to the driver, a recalibration of ADAS is needed to secure road safety. Independent of the climate or the location that the replacement of the windshield is executed. The installation and calibration must be precise and follow a defined process.

ADAS recalibration needs to be done depending on the car model and the automotive OE manufacturers specifications, this could be either static, dynamic or both. Static calibration is done in a specifically tailored workshop environment, without having to drive the car. Static calibration requires the usage of specialized equipment's such as camera and sensor calibration (CSC) tools. Dynamic calibration demands driving the vehicle to complete the ADAS calibration process. The calibration is done with the aid of a hand-held unit plugged in directly into the vehicle. The vehicle will have to be driven at the OE manufacturer defined speed and in good weather conditions as a part of the windshield replacement process. Exposed to this test, the ADAS systems are calibrated.

FAILURE TO OPTIMIZE IS NOT AN OPTION

To provide maximum safety and make the windshield replacement no hassle to the driver and to liability holders it is ideal if the replacement is done with both glass and adhesive which meet the specific automotive OE standards. The auto glass replacement adhesive should be fully cured prior to the handover of the car to the driver. Or in other words with the same strength as when assembled in the factory to provide the required level of structural strength when going back on the road. Such an approach ensures most precise, safe, robust and reliable windshield replacement helping:

- to cut come back costs and operational efficiency of auto glass operators
- reduce vehicle down-times of fleets operators and
- secure high customer satisfaction level for insurers.

A COMPETITIVE OPPORTUNITY FOR FIRST MOVERS

ADAS and new design concepts of cars with increased structural complexity created a dynamic in the auto glass replacement industry in which the need to optimize the selection of materials, operational excellence and efficiency. The reduction of comeback costs and short vehicle down times became eminent to ensure efficiency and customer satisfaction. Auto glass companies and fleet operators know that operational optimization have a significant impact on their bottom line and long-term sustainability but in many cases, companies are not yet acting on that knowledge.

GAINING AN EDGE THROUGH A TOTAL COST OF OWNERSHIP (TCO) APPROACH

By taking a TCO approach to operations, auto glass companies and fleet operators can significantly reduce their running costs. By looking at the full picture when purchasing or maintaining equipment and/or operations such as auto glass replacement adhesives, it allows decisions to be made based on cost-efficient output, rather than short-sighted, up-front costs. Auto glass installers who move now towards a holistic approach to glass replacement will be well placed to gain competitive edge over their competitors. This will help not only with the immediate bottom line but also in making sure they are strategically placed to be ready to do glass replacements in a successful way based on today's and tomorrow's safety and performance standards as referenced by the automotive industry. Fleet operators can cut down their vehicle down times because a broken windshield can be replaced immediately.

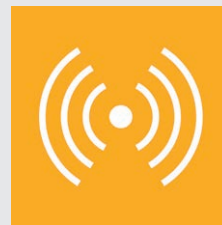
FULL CURED WINDSHIELD ADHESIVES: AN UNREALISED SAFETY AND PERFORMANCE OPPORTUNITY

Analysis done by Sika found out that windshield installation related to ADAS calibration executed with effective auto glass replacement adhesives can generate savings and have a significant impact on the bottom line.

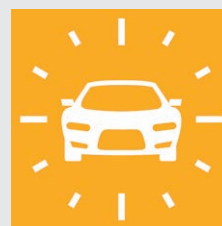
Despite this, there appears to be a gap between intention and action. As a result, operators and technicians still experience installation and ADAS calibration problems resulting into come backs because of the wrong choice of the auto glass replacement adhesive. Key reasons for this appear to be a lack of understanding of the benefits effective auto glass replacement adhesives can bring. Premium auto glass adhesives such as SikaTack® Elite based on the PowerCure adhesive technology offer a 30 minutes minimum drive-away time (MDAT) (95% percentile dummy / FMVSS 212) and make sure that the vehicle can be returned to original condition (specification) within only 60 minutes offering a minimum vehicle down time (fully cured to OEM level). This is thanks to a fast, full cured adhesive ensuring that the windshield is bonded with the same strength as when originally assembled in the factory and achieved independent of the climate.

PowerCure is the system of choice when efficient, safe, robust and fast ADAS calibration is required. The full cure concept of PowerCure offers peak performance, piece of mind to the driver, the auto glass technicians and all other liability holders.

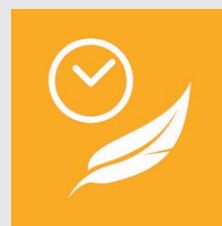
PowerCure supports a zero come back policy and pushed upward the operational efficiency of fleets towards zero limitations. As the adhesive is fully cured within one hour should the newly installed windshield need to be removed this becomes a simple, clean job without risk of soiling the vehicle interior or being restricted due to long curing times.



Fast, robust ADAS re-calibration
of safety and distance control sensors



Vehicle in original conditions
Vehicle is returned to original shape within only one hour – minimal vehicle down time



Potential come-backs can be repaired immediately
No risk of soiling vehicle interiors or long waiting time

THE POWER OF PARTNERSHIP

Collaboration is key to unlock success in the auto glass industry. Sika and its local sales and technical support organizations are here to support you to find the right product and auto glass replacement adhesive training solutions for auto glass specialists or fleet operators. By working together with automotive OEMs, auto glass experts and industry bodies Sika is benefiting from industry-leading tools, research and expertise helping us to constantly maintain and drive technology leadership with our auto glass replacement adhesives.

CONCLUSIONS

This is a time of tremendous opportunity for the auto glass replacement industry. Sentiment among auto glass companies, insurer and fleet operations are shifting because of new car designs such as light weight vehicles, ADAS and the pressure on operational efficiency and liability. But along with opportunity, these changing fundamentals bring with them increased competition and increased risk.

The selection of the right windshield and replacement adhesive is a key element to this quest for safety, liability and operational efficiency. Full cure adhesives such as SikaTack® Elite based on PowerCure technology provide an efficient, safe solution when it comes to ADAS related auto glass replacement and where peak performance in combination with zero limitations is required.



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For more details on Sika solutions for Automotive Aftermarket contact us or visit our website www.sika.com/aftermarket

<https://industry.sika.com/en/home/technologies/powercure/powercure-adhesive.html>

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