

LOOKING INTO THE FUTURE OF AUTOMOTIVE GLASS



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Glass plays an important role in the vehicles' ability to offer safety and security to its occupants. In addition to its traditional characteristics, automotive glass can improve car occupant safety and security in several other ways.

Traditionally, the windshield provides a significant amount of strength to the structural support in the cabin of the vehicle. For instance, in a front end collision the windshield provides up to 45% of the structural integrity to the cabin of the vehicle and in a rollover, up to 60%. The windshield is an integral part of the safety restraint system in the vehicle. It keeps the roof from crushing in on occupants in a rollover, it allows the airbags to deploy in the correct position to cushion passengers, and prevents passengers from being ejected in a serious collision.

In a similar way, tempered glass is treated to be far more resistant to breakage than simple annealed glass and to break in a more predictable way when it does break, thus providing a major safety advantage in almost all of its applications.

Apart from the standard automotive products – laminated windshields and tempered glasses which are used for sidelites and backlites, technological advancements are being seen in the automotive glazing industry. Some of them are given below:-

IR Cut Windshields and Solar Control Glass for sidelites and backlites:

The IR Cut laminated glass is built with a special PVB interlayer. This interlayer has a special additive that blocks the sun's heat and prevents it from entering the car. Solar control glass which is used for sidelites and backlites has a metal oxide ingredient which blocks the sun's heat.

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So, even if the car is parked under the sun, it ensures faster cooling of the cabin to a comfortable temperature. It improves the air-conditioner's performance due to less heat transfer from outside and also ensures longer life of seat covers due to reduced heat.

Acoustic Windshield for Cars:

A high-performance car glass that is made by sandwiching two panels of glass with a special PVB interlayer having a high-dampening material. This blocks high frequency sound waves and dampens the acoustic and mechanical vibrations. It significantly reduces noise and vibrations inside the car cabin thereby reducing driver fatigue.

Head-up Display Glass: The dashboard information is projected right on the windshield through an inbuilt projector in the car's console. The glass is built with a wedge shaped PVB film that is thin towards the bottom and thick on the top. This provides better clarity and avoids a blurred image that usually occurs in a standard windshield.

Water Repellent Glass for side windows: The glass is built with a special hydrophobic coating that increases the angle of contact to prevent water from spreading onto the surface. It enables a safer driving experience during rains due to better visibility through the side door glass.

Heated Windshields: Uses very fine, almost invisible, heatable tungsten wires, embedded on the PVB interlayer film that are heated by the car battery. It helps in defogging and removing of the snow deposits.

These value-added products are beginning to be adopted by the OEMs as they offer thermal comfort, noise reduction, reduction in fuel consumption, and design/ visibility enhancement along with functional displays.

The future will surely see more focus on these products.