CORNING
Gorilla Glass

Corning Gorilla Glass for Automotive Exteriors 3 (AE03)

Corning Gorilla Glass for Automotive Exteriors is a fusion-drawn, chemically strengthened aluminosilicate glass for automotive exterior applications. Gorilla Glass for Automotive is deployed in a three-layer hybrid window laminate construction as the thinner inner ply, with a thin polyvinyl butyral middle ply and a conventional thicker soda lime glass layer as the outer ply. This innovative Gorilla hybrid laminate can be 1/3 lighter, 2x tougher, and offer better optics than a conventional automotive window.

Benefits

When compared with conventional automotive window laminates, Gorilla hybrid laminates can be:

- ***1/3 lighter:*** Reduced window weight can help improve fuel economy, lower CO2 emissions and lower center of gravity for improved driving performance and handling.
- ***2x tougher:*** Gorilla hybrids have greater impact resistance against blunt and sharp stones, which can help prevent the occurrence of severe breakages that require repairs or replacements.
- ***Optically advantaged:*** Gorilla Glass is virtually drawline free, offering optical clarity and reducing image distortion.

Applications

AE03 can be used in virtually all car window types:

- Windshields
- Roofs
- Front sidelites
- Rear sidelites
- Backlites
- Quarterlites
- Bulk heads

Dimensions

Available thicknesses: 0.5 mm – 0.7 mm
*Other thicknesses available on request**

*Reference AE03 when making requests

Physical and Thermal Properties

Viscosity and Durability

Softening point ($10^{7.6}$ poises)	783°C
Annealing point (10^{13} poises)	563°C
Strain point ($10^{14.5}$ poises)	516°C

Physical Properties

Density	2.48 g/cm^3
E-Modulus	69.6 GPa
Poisson's ratio	0.22
Vickers hardness (200g load)	
Un-strengthened	548 kgf/mm^2
Strengthened	659 kgf/mm^2
Fracture toughness	0.59 MPa m$^{0.5}$
Coefficient of thermal expansion (0°C - 300°C)	99.4 x 10^{-7} / °C

Chemical Strengthening

Compressive stress*	>565 MPa
Depth of layer*	>40 µm

*Capable of reaching a specific range.

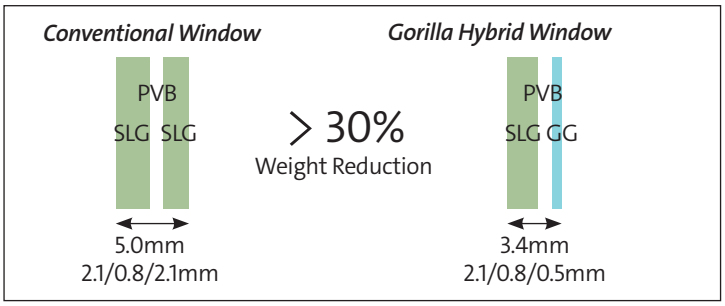
Optical Properties

Refractive index (633nm)	
Core glass*	1.51
Photo-elastic constant	29.3 nm/cm/MPa
Visible transmission (450-850nm)	>90%
Optical distortion (zebra board)	Min. 55°

*Core index is used for FSM-based measurements since it is unaffected by ion-exchange conditions.

Gorilla Hybrid Laminates

1/3 Lighter

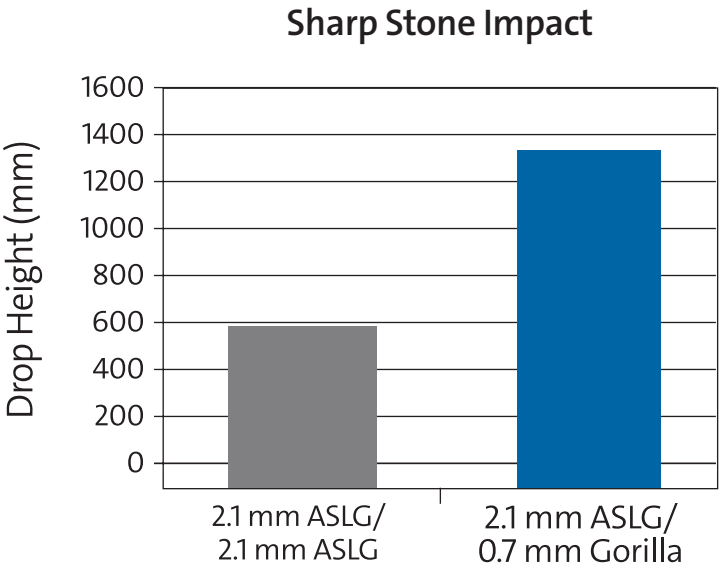


Laminate Construction**	Thickness	Weight	Weight Saved
2.1 mm ASLG/2.1 mm ASLG	5.0 mm	2.3 lbs/ft²	--
2.1 mm ASLG/0.7 mm Gorilla	3.6 mm	1.6 lbs/ft²	31%
2.1 mm ASLG/0.5 mm Gorilla	3.4 mm	1.5 lbs/ft²	36%
1.8 mm ASLG/0.5 mm Gorilla	3.1 mm	1.4 lbs/ft²	42%
0.7 mm Gorilla/0.7 mm Gorilla	2.2 mm	0.9 lbs/ft²	62%

**With 0.76mm PVB interlayer

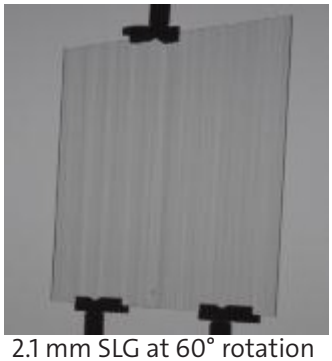
Reduces weight while providing greater damage resistance.

2x Tougher



Gorilla hybrid laminates can be more than 2x impact resistant to blunt or sharp stones, resulting in fewer severe cracks.

Optically Advantaged



2.1 mm SLG at 60° rotation angle

0.7 mm Gorilla Glass at 70° rotation angle

Gorilla Glass has virtually no drawlines when compared with ASLG.

CORNING

Contact your account representative for additional product specifications and availability.

For more information about Corning Gorilla Glass for Automotive:
Web: corninggorillaglass.com\auto

C-AE-PI-AE03-0002
August 2020