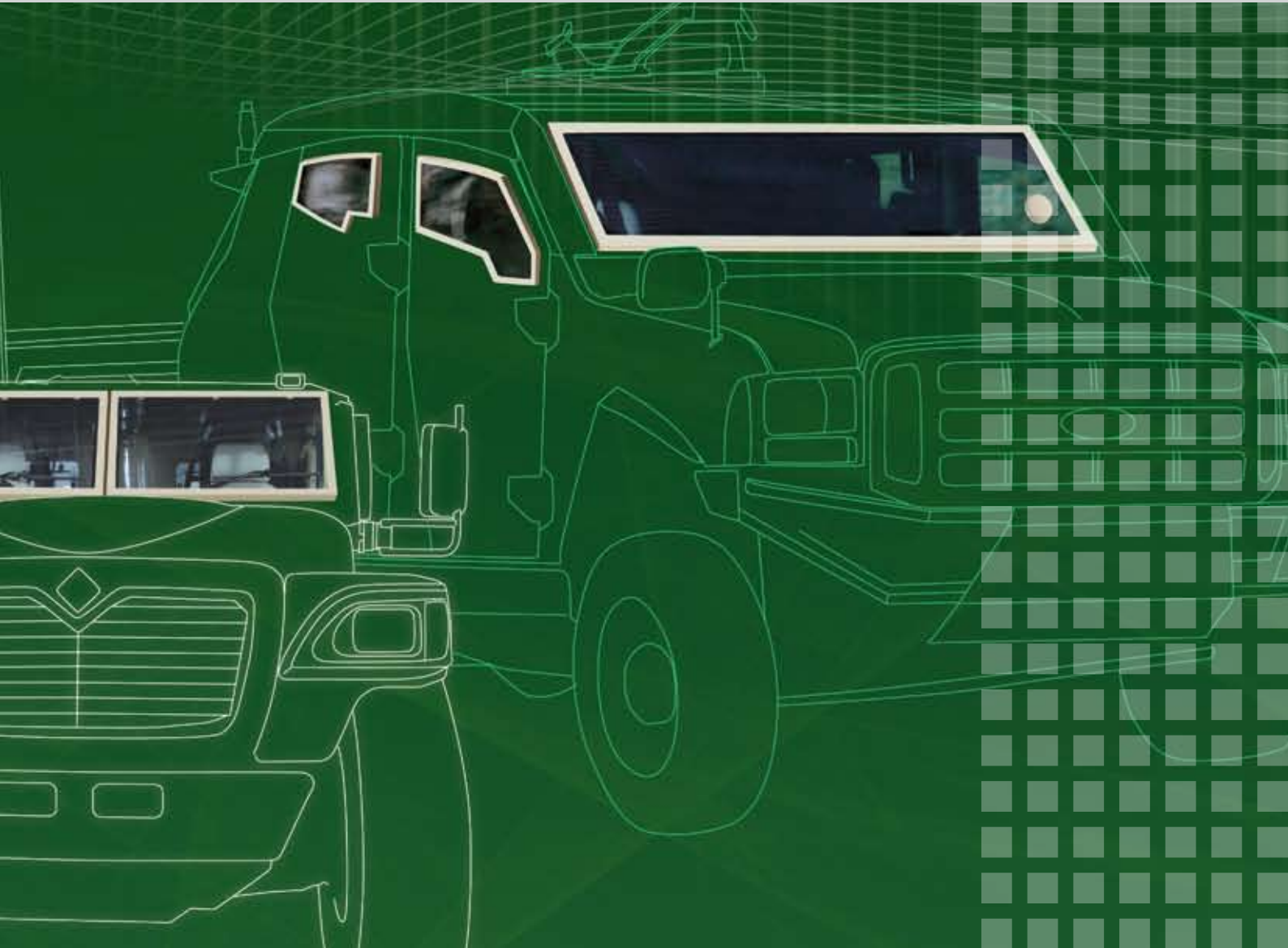


# Fractional Surface ("FS") Glass



The future of transparent armor



Fractional Surface (“FS”) Glass is one of the newest innovations from OSG. This novel approach to the design of transparent armor (“T.A”) offers two significant benefits when applied to windows in tactical wheeled vehicles:

- Reduction of weight while maintaining ballistic performance levels
- Improved vision through the window after strike / impact

Each yields practical improvements over traditional transparent armor designs:

Weight reduction decreases wear and tear of vehicle components – especially the drive train and suspension – which increases vehicle lifecycle. Weight reduction also increases vehicle payload capacity and maneuverability. In short, reduction of weight improves vehicle performance, extends vehicle life and reduces costs.

Studies indicate that, to any given performance (protection) level, FS glass will allow reductions in weight from **25%** to **28%** when compared to ‘conventional’ transparent armor designs.

The following table provides comparisons of thickness and weight of conventional and FS transparent armors performing to specified protection levels.

Threat	Pattern	Conventional Thickness	FS Thickness	Weight Reduction (average)	Weight Reduction (percentage)
.50-caliber	3 strikes (triangle)	140 mm	<b>100 mm</b>	18.9 lbs / ft2	<b>28.60%</b>
7.62 X 39 AP	6 strikes (3-2-1)	72 mm	<b>57 mm</b>	7 lbs / ft2	<b>28%</b>
7.62 X 39 AP	3 strikes (triangle)	61 mm	<b>44 mm</b>	8 lbs / ft2	<b>27.90%</b>

A potentially life-threatening danger inherent in transparent armor is that after attack, when a window is impacted by ballistic (bullet) or fragment (FSP) projectiles, breaks and cracks in the glass make it impossible to see through the window. Without clear vision, drivers lose the ability of removing the vehicle from the attack site and occupants lose situational awareness.

OSG’s innovative FS glass increases visibility through the glass after impact by ‘compartmentalizing’ the damage – in effect, restricting damage to limited surface area. As a result, larger areas remain unaffected after attack, providing better vision.

FS glass is available composed of traditional T.A. materials which reduces cost. FS glass is also available using advanced T.A materials which allows for even greater reduction in weight and additional benefits to the vehicle and to the warfighter.