

SWDEE use of laminated glazing in M3 & M2 category vehicles

This report outlines the initial finding into the use of laminated glazing in vehicles of category M3 & M2.

Laminated glazing is defined as two plates of glass bonded to a central PVB interlayer. The glass is normally tempered to give the glass strength and the interlayer's can be varied to give differing characteristics and additional functions or features.

Primary function of laminated glazing is to retain the integrity of the glass following an impact sufficient to rupture it.

Nominal minimum thicknesses of a laminate is: 6mm, 15.76Kg/m²

Nominal minimum thickness of single glazed is: 4mm, 9.63Kg/m²

Nominal minimum thickness for double glazing is: 2*3mm, 15.76Kg/m²

Weight difference from double glazed toughened glass to single glazed laminated is negligible but is affected by the design of the emergency exit requirements i.e. the hinged frame design and implementation.

Issues around laminated glazing in the PSV market.

- Current legislation philosophy is to get people out not keep people in.
- Cost
- Difficult to compare as technical performance will change installations i.e. double toughened to single glazed laminated
- Weight increase if replacing single glazed for single glazed or double glazed for double glazed
- Noise increase, double glazed to single glazed laminated
- Number of exits required under 2001/85 and 107-02. As many as 10 window exits required in double deck vehicles 6 upper deck 4 lower deck.
- Change of vehicle specification during build or in-service i.e. increasing passenger count currently only requires additional hammers, with laminated glazing it would require a new window with built in egress
- Availability of laminated window egress systems for high spec vehicles, style, cost, noise and operation
- In vehicle condensation with single glazing

Advantages of laminated glazing.

- Selectable enhancements
 - UV protection
 - Noise insulation
 - Anti glare
- Passenger retention