

ACOUSTIC LAMINATED GLASS

Acoustic laminated safety glass is manufactured with a special vinyl interlayer that offers better sound control than traditional polyvinyl butyral (PVB) interlayers. The sound control rating of glass is expressed as a weighted sound reduction index (Rw) measured in decibels (dB). Conventional laminated glass with a single normal strength (NS) vinyl interlayer is rated at 33dB.

A high penetration resistant (HPR) interlayer can improve the rating to 34dB. Acoustic laminated with a 0.76 mm HPR interlayer is rated at 38dB and provides a noticeable improvement in sound reduction. Acoustic laminates also work better at lower temperatures because the Acoustic interlayer retains its sound reducing properties better than traditional PVB interlayers. In addition to a better weighted sound reduction index, Acoustic laminates offer superior dampening across the coincidence dip – a frequency range in which glass of a specific thickness typically becomes more transparent to sound waves.

To put the above values in context, one must bear in mind that every 10dB difference in sound pressure level represents a halving or doubling of the perceived noise. Therefore it can be assumed that every dB difference represents approximately 10%.

As 4mm float has an average STL of 29dB, it can be said that 6.76mm Acoustic Laminate is 7dB better i.e. 70%. 8.76mm Acoustic Laminate would be 90% better than 4mm float.

It is important to remember that these acoustic values are very dependent on the frequency of the noise source, and that low frequency noise tends to be structure borne, and is extremely difficult to insulate against. Examples of low frequency noise would be jack hammers, exhaust brakes of trucks, bass music etc. We also need to take into account that certain noise will come through the actual frames of the doors and windows where they close.

THICKNESS	PRODUCT	STL	% REDUCTION (6.38 BENCHMARK)
4mm	Clear	29dB	- 40%
6mm	Clear	31dB	- 20%
6.38mm	Laminate Clear	33dB	0
6.76mm	Acoustic Laminate Clear	36dB	+ 30%
8.38mm	Laminate Clear	35dB	+ 20%
8.76mm	Acoustic Laminate Clear	38dB	+ 50%
4/12/4	SIG	31dB	- 20%
6.38/12/4	SIG	35dB	+ 20%
6.38/12/6.38	SIG	37dB	+ 40%
6.76/12/6.76	SIG (using 6.76mm)	40dB	+ 70%