

Noise Insulation Properties of Roller Shutters.

Independent laboratory tests on OZ Roll® roller shutters have demonstrated that OZ Roll® roller shutters can reduce noise transmission through a window opening. The noise reduction benefits obtained in university tests varied significantly depending on the frequency of the noise source. For low frequencies between 100 Hz and 300 Hz the roller shutters did not provide any benefits. However, for higher frequencies between 300Hz and 1250Hz the sound transmission loss was improved by 3-10 decibels. At higher frequencies (>1250Hz) the improvement in sound transmission loss with the roller shutter curtain down was typically greater than 10 decibels.

To understand how the change in sound levels (decibels) is perceived, the apparent change in loudness is shown in table 1

Change in Sound level	Change in apparent loudness
3 decibels	just perceptible
5 decibels	clearly noticeable
10 decibels	half as loud
20 decibels	much quieter

To understand how some common noises compare with changes in sound levels (decibels) and the predicted apparent change in loudness refer to table 2.

Table 2

Noise	Reduction in Decibels	Predicted subjective response
City traffic (10m from curb)	4 decibels	just perceptible - clearly noticeable
Urban motorway (40m from edge)	3 decibels	just perceptible
Jet airliner flying at 300m	6 decibels	clearly noticeable
Dishes being washed (kitchen)	10 decibels	perceived as half as loud
2 stroke whipper snipper at 7m	7 decibels	clearly noticeable
2 stroke lawn mower at 7m	4 decibels	just perceptible - clearly noticeable
Small dog barking at 5m	9 decibels	clearly noticeable – perceived half as loud

Optimum noise reduction is achieved using an installation with silicone sealant applied between the head box and guides and the wall. To be effective the rest of the home must be sealed properly to ensure there are no air gaps which will allow sound to pass. These air gaps will significantly reduce the effectiveness of the roller shutter and noise reduction benefits will not be apparent.

Notes: Noise reduction tests refer to noise reductions achieved in university tests through a closed sliding aluminium framed window with dimensions 1320*820mm. Fitted with a roller shutter (AR400 curtain) mounted ON WALL with silicone sealant applied under the head box and guides for optimum sealing of the roller shutter to the wall. The tests only show noise reduction through the roller shutter and no allowance is made for other noise transmission paths such as gaps around doors, ventilation and airconditioning holes in ceilings etc.

