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Noise control

Combating external noise intrusion

Noise reduction units are often requested by customers looking to combat external noise intrusion. Here, it is important to note that the unit alone will reduce noise levels by a certain amount but the whole installation also needs attention to achieve the maximum noise reduction. Things such as trickle vents, poor fitting gaskets, gaps between the frame and wall etc, will all allow noise to pass into the room. The best sound proof units will not prevent these noise 'leaks'. Customers may complain that the expensive glazing has not made any difference and in a poor frame, it won't.

Sound reduction is generally classed in 3 ways:

C This is the mean average sound reduction in decibels (dB) across a range of frequencies.
Rw This is a weighted decibel reduction incorporating a correction for the human ears' response to sound. It is more commonly used.
Ctr This is the decibel reduction for the specific sound frequencies of typical road traffic noise in towns and cities.

External noise



specific sealed unit make up that will offer the required performance but take into account U-values and glazing possibilities.

Noise reduction in glazing is achieved by altering the frequency of noise travelling through the glass. This is done by varying the thickness of the sealed unit make up.

Decibel reduction figures

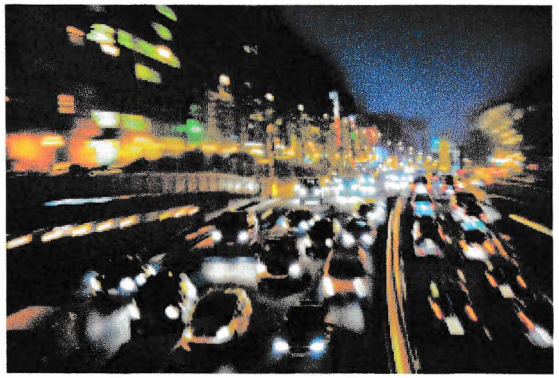
When looking at a 28mm overall thickness with standard glass types, useful decibel reduction figures to note are:

Unit make up	Rw	Ctr	C
4/20/4	30 dB	26 dB	30 dB
6/16/6	32 dB	30 dB	32 dB
6/12/10	37 dB	34 dB	36 dB
6/16/6.4	37 dB	32 dB	35 dB
6/16/6.8A	40 dB	32 dB	37 dB

A = acoustic laminate

Other dgu make ups

Unit make up	Rw	Ctr	C



Associated Pages

- Thermal Performance
- Safety
- Obscure
- Solar Control
- Low Maintenance

Downloads

- Glass and Glazing Federation -Acoustics

Acoustic data sheets

- 36-31 10 clear 12Ar 6 PT+ U-1.2
- 39-32 6.8 Ac clear 16Ar 6PT+
- 39-33 10.8Ac (552ac) lam 12Ar 6PT+
- 39-33 10.8Ac (642ac) lam 12Ar 6PT+
- 42-35 8.8 Ac clear 16Ar 6PT+
- 42-36 10.8Ac lam clear 16Ar 6PT+

- 45-38 8.8Ac lam clear 16Ar 10 PT+
- 45-39 10.8Ac (552ac) lam 16Ar 10PT+
- 40 – 36 8.8Ac – 20 – 10PT+

Unit make up	Rw	Ctr	C
10/20/8.8A (38mm thick)	40 dB	36 dB	39 dB

Consideration needs to be given to the required U-value for regulation purposes. Some good db reduction units such as the 6/12/10 make up, will have a poor U-value due to the 12mm cavity.

Triple glazing doesn't always mean better sound performance

In some cases it can actually be worse than a double glazed equivalent. Some examples can be seen below where the db rating does not offer much, if any, improvement over DGU performance. The other key issue is the glass unit thickness that may not be able to be glazed due to glazing bead availability.

Unit make up	Rw	Ctr	C
4/12/4/12/4 (36mm thick)	31 dB	26 dB	30 dB
4/16/4/16/4 (44mm thick)	32 dB	27 dB	30 dB
10/12/6/12/8.4A (48mm thick)	46 dB	40 dB	44 dB

Often customers will be looking to achieve a sound reduction in their standard unit width configuration: 28mm overall. If they want a high sound reduction, it is not always possible within this 28mm available space and often there may be a compromise in the U-values.