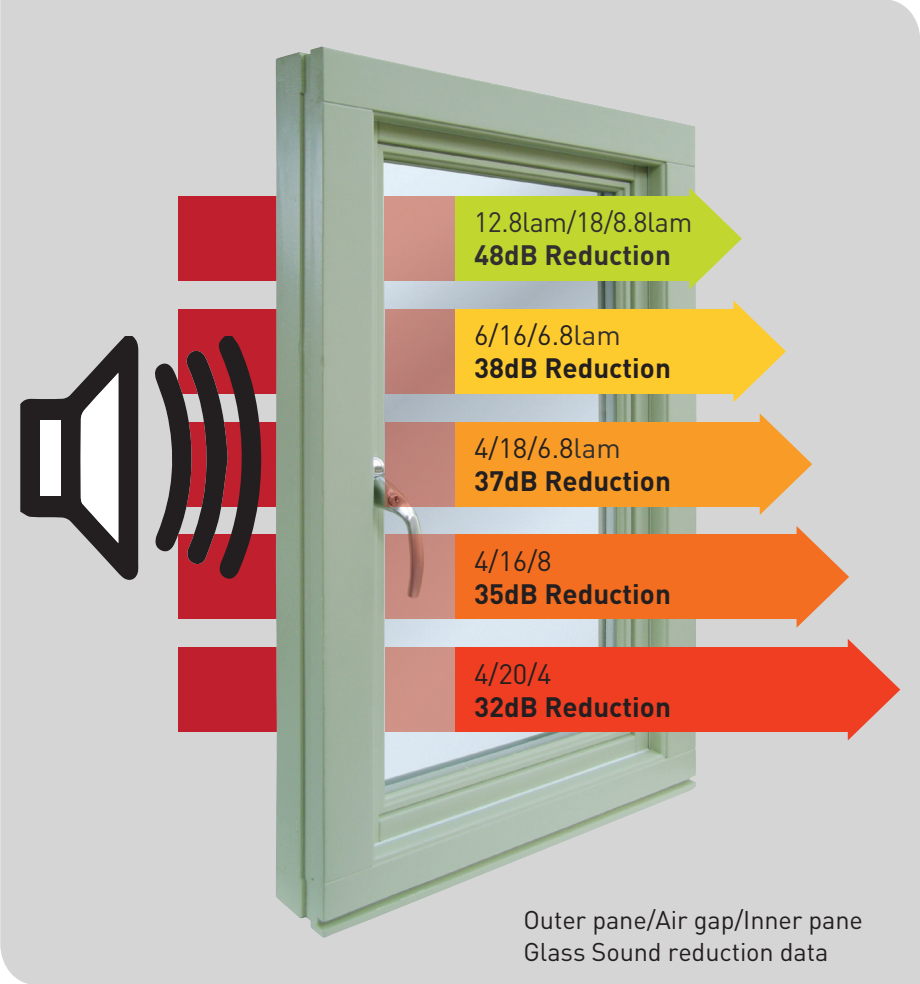
Reduce noise pollution with acoustic glass for better sound insulation

DATASHEET

Acoustic glass



Outer pane/Air gap/Inner pane
Glass Sound reduction data

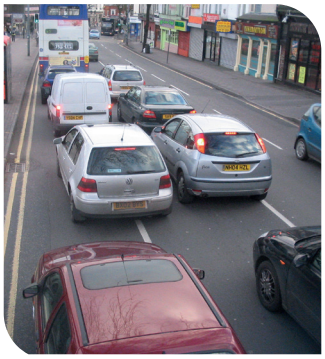
Bespoke timber window and door manufacturer Arden have developed a range of noise reducing windows. Noise pollution is increasingly becoming a real problem for crowded areas: air traffic, busy roads... With the use of acoustic glass you can protect your home from this disturbance and reduce noise pollution.

Key Benefits

- **Acoustic glass is a perfect solution for insuring exceptional levels of sound insulation.**
- **Providing insulation for impact and airborne noise whilst maintaining the safety and security properties of laminated glass.**
- **Available as double glazed units ranging in thickness from 24mm - 40mm.**
- **dB reduction up to 48dB from DGU**
- **Acoustic glass works by reducing a sound wave's energy.**
- **Available in all window ranges including sliding sash.**

Noise reducing windows help keep unwanted noise out, DGU's provide greater sound insulation of up to 48dB sound reduction

Airplane at 300m 85dB



Heavy Traffic 85dB

Lawnmower 90dB

Quiet rural area 40dB

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Acoustic Window Features

Understanding Acoustic Windows

WHAT IS NOISE?	Sound is a form of energy caused by molecules vibrating in a gas, liquid or solid. These vibrations are known as sound waves. The frequency or pitch of a noise, measured in hertz, is the number of sound waves emitted per second. High pitched sounds are carried by short sound waves and low pitched noises by longer waves.
HOW IS NOISE MEASURED?	The actual level or intensity of noise is measured in decibels (dB).
HOW IS ACOUSTIC INSULATION MEASURED?	The acoustic insulation properties of a window are measured with the 'R' sound reduction index. For example, a window with an 'R' of 20 decibels should reduce a 60 dB outside traffic noise level to 40 dB within the room.
UNDERSTANDING THE Rw INDEX (C;CTR)	The acoustic insulation property of a building material is defined by an index representing the difference between internal and external noise levels. The acoustic insulation performance of a building is the 'R' sound reduction index.
Rw	This is the most common method of rating sound insulation in buildings and building elements. It incorporates a weighted correction for the human ear and is expressed in dB. Calculation methods use a standard noise spectrum and are detailed in EN ISO 717-1.
CTR	Used when the source of the noise in question is road traffic.
C	Outside background noise.
SPECTRUM ADAPTATION TERMS - C AND CTR	Depending on how a window is assembled and installed, it may under-perform at low, medium or high frequencies. Optimum performance can be achieved from a unit when it provides good acoustic insulation at the frequencies where the noise is at its greatest. Good acoustic insulation against specific types of noise can also be achieved by modifying the type and composition of the glazing. Until recently, glazing specification has been based on a single performance figure, without taking all the characteristics of the noise source into account, which can sometimes lead to unwise investment and over-specification.
VENTILATION**	The sound reduction level for a trickle ventilator isn't measured in the same way as a window. For instance, a window with a sound reduction of 35dB used with a background ventilator giving a sound reduction of 35dB will result in somewhat less than 35dB. If more than one vent is required, the attenuation level becomes progressively worse. Arden would always recommend that alternative ventilation systems should be preferential when seeking high levels of acoustic performance.
SECURITY	All products available as Part Q compliant. Most available as full Secure By Design - PAS24 : 2012.
GUARANTEE	All products come with a 35 year anti-rot guarantee and 10 year guarantee on all manufactured items.

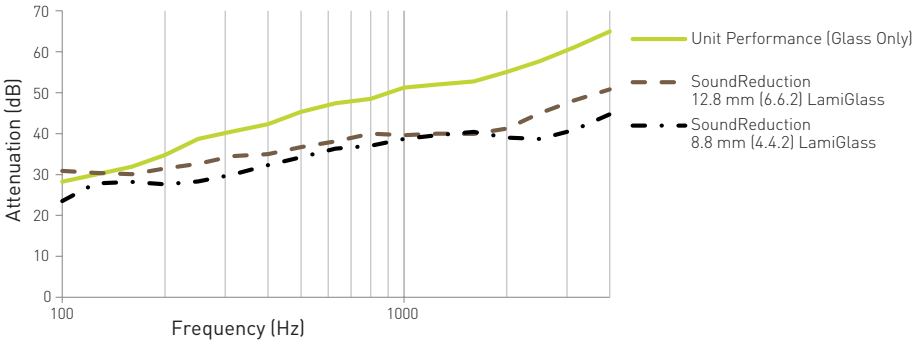
EXAMPLE dB RATINGS

	Glazing	No vent or vent caulked**	Vent closed**
Kinward Sliding Sash	10-12-6.4	39	37
Warwick/Hathaway Casement	10-12-6.4	40	35
Fully Reversible	10-12-6.4	40	32
Kinward Sliding Sash*	12.8-18-8.8	45	32
Warwick/Hathaway Casement*	12.8-18-8.8	45	35
Fully Reversible*	12.8-18-8.8	45	38

*Calculated figures awaiting test data **please contact Arden for details of venting options

ACOUSTIC PERFORMANCE DATA

Frequency						Rw(C:Ctr)	Rw	Rw + C	Rw + Ctr
125	250	500	1000	2000	4000				
30	39	45	51	55	65	48(-1;-6)	48	47	42



DATASHEET

Acoustic glass

Sound	Approximate Sound Level (dB)
Jet engine taking off at 100m	120
Pop Concert	110
Car Horn	100
Heavy Traffic	85
Aircraft at 300m	85
Loud music	80
Moderate Traffic	70
Noisy Office	60
Light Traffic	50
Quiet Radio	30
Quiet Conversation	30
Quiet Room	20
Faint Normal Breathing	10

Various factors are key to ensuring that you install the correct window to assist with noise reduction. The materials used in the manufacture of the window and its overall design will have an impact on the overall dB rating of the product. In addition the method of installation is critical ensuring all air gaps are sufficiently sealed and the installation is completed in line with current UK standards. One of the biggest contributors to the overall performance of the window in relation to dB reduction is the type of glass used.

Please contact Arden for further information.

ARDEN offers a comprehensive range of timber windows and doorsets including mock sash, flush sash, vertical sliding sash, top swing and tilt & turn systems. External single and double doorsets to PAS24 : 2012, Garage Doorsets and Bi-folding doorsets are also available. All products can be supplied and installed on a national basis. Visit www.ardenwindows.net for more information or contact us using the numbers below.

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