



Sound Insulation Basics

Aircraft noise may interfere with typical activities in homes such as watching television, talking on the telephone, and sleeping. Reducing the level of aircraft noise inside an existing home or planning a new home for improved noise reduction is referred to as sound insulation. Sound insulation of homes and other buildings has been proven to be very effective at mitigating adverse noise impacts.

Typical sound insulation modifications include:

Windows - The single most important modification is to use acoustical windows, or add acoustical storm windows over existing windows.

Doors - Acoustical doors or acoustical storm doors should be used. These products are heavier than typical doors and have a special type of weather-stripping.

Walls and Ceilings - For houses with lightweight walls and ceilings it is often necessary to add layers of gypsum board or other materials to walls and ceilings in order to meet the acoustical design goals.

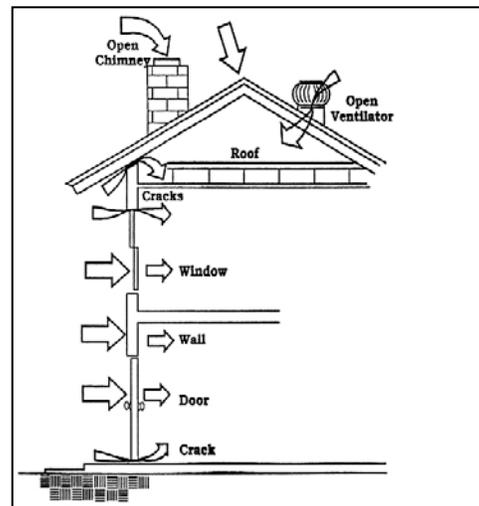
Skylights - For skylights the recommended modifications are to add secondary interior glass panels, to replace the units with special acoustical skylights, or to remove the skylights.

Exhaust Fans - Kitchen range hood or in-wall fans that duct to the exterior are a significant noise leak. In general, replacing them with ductless models is the best course of action.

Ventilation - When a house is sound insulated it is necessary to close windows to achieve the benefits of the modifications. To replace the cooling and ventilating effects of open windows air conditioning and/or ventilation systems should be provided.

Air Conditioners - Through-window or through-wall air conditioners should be removed to achieve the noise reduction goal.

Fireplaces - The recommended modifications for fireplaces are to either provide a special acoustical chimney-top damper, or to provide tight-fitting glass doors over the fireplace.



Typical Sound Insulation Costs

Sound insulation costs vary widely depending upon such factors as:

- Outdoor noise zone,
- Selected indoor noise goal,
- Construction of the residence,
- Region of the country, and
- Availability of contractors familiar with sound insulation construction.

Source: Wyle Acoustics Group, "Guidelines for Sound Insulation of Residences Exposed to Aircraft Operations," April 2005, which is available at

<http://www.afcee.brooks.af.mil/ec/noise/aicuz/report.pdf>.

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