

LINEAR RESPONSE

INVISIBLE SPEAKERS & SUBWOOFERS

- ▶ Tips
- ▶ Troubleshooting
- ▶ Installation Videos
- ▶ And More at:

StealthAcoustics.com

Subwoofer Installation Notice

▶ Please Read **BEFORE** Installing Subwoofer Models B30g & B22g

ACOUSTIC ISOLATION PRACTICES

SUBWOOFERS

It is important that the location for Stealth Invisible Subwoofers be chosen carefully. The backside low frequency output of these panels is roughly equivalent to the front side output and as such, sound can penetrate through the rear wall behind the speaker into the adjacent space. **Ideally, subwoofers should be mounted on exterior walls, or on interior walls connected to less used spaces (like laundry rooms, closets, etc) to avoid low frequency bleed-through to an adjacent room.**

- ▶ **It takes mass to attenuate sound energy and the lower the frequency, the more mass required.** Additional sound dampening can be achieved by adding additional mass like gypsum wallboard to wall and ceiling structures around the subwoofer. Varying layers of different dampening materials in and around the back box can improve sound isolation dramatically.

CHOOSING AN INSTALLATION LOCATION

All in-wall/ceiling speakers are subject to unwanted sound transmission. Choosing the optimum installation location for each speaker is an important step in the design process. Acoustical isolation solutions for loudspeakers are specific to each installation, as the acceptable level of isolation varies by project. While Stealth Acoustics cannot indemnify specific isolation results for a given installation, here are some guidelines to follow:

- ▶ **Know the expectations of the job.** a single family home might be different from a "zero-interference" metric of a luxury condominium.
- ▶ **Sound isolation is a combination of mechanical and acoustical properties.** Stealth speakers have negligible mechanical vibration at the attachment points, so the primary isolation issues with Stealth speakers are acoustical.
- ▶ **Whenever possible, place speakers on outside walls, non-party walls, or adjacent to interstitial spaces** (attics, closets, laundry rooms, etc.) This is especially true for subwoofers where the backside low frequency output is roughly equivalent to the front side output and as such, sound can penetrate through the rear wall behind the speaker into adjacent spaces.
- ▶ **Walls and ceilings near Stealth speakers need to be firmly constructed and free of structural items that could rattle** (such as wiring and plumbing), or transmit sound to other parts of the home (ie. duct work).
- ▶ **Air-gaps greatly reduce sound isolation.** Avoid air-gaps by sealing stud, header, and bottom plate penetrations with caulk or expanding foam, and caulking should be used where the wallboard attaches to studs.
- ▶ **Stealth recommends the use of a Back Box sealed enclosure with each speaker.** Sealed enclosures loosely filled with insulation can also be custom built for the specific installation. The insulation absorbs some high-frequencies while the enclosure not only isolates sound it also "loads" the speaker resulting in increased sound quality. Unwanted sound transmission can still occur when using a Back Box.
- ▶ **Test the system before seam finishing to ensure sound isolation objectives are achieved.** Involve an Acoustical Consultant to confirm your solution if the job requirements are critical.



Toll Free: 888.865.6800 | Fax: 360.424.8872 | StealthAcoustics.com

A Division of Dimensional Communications, Inc.
1220 Anderson Road, Mount Vernon, WA 98274