

Basic Concepts

Generally treat the installation of acoustic panels as you would any other upholstered furnishing in your home or office. Do not obstruct foot traffic, light fixtures, HVAC system air flow, or mount units close to a heat source, and never mount panels where they will interfere with access to, the operation of, or the visibility of, important fixtures such as exit signs or fire extinguishers.

- **Reducing Echo / Reverb Time** If you are installing panels in a large room [over +/- 7,000 cubic feet] for the sole purpose of reducing echo, then typically 2" thick panels such as the RT422 will suffice, and the only general rule for placements is to spread the panels around the room's surfaces [walls and ceilings] evenly. Try to avoid bunching the panels up in a single location, or just a few spots.
- **Placement** When building a critical listening environments [studio control rooms, mixing suites, audiophile listening rooms and home theaters], strive to maintain left to right symmetry with both your sound system, listening position, and all your panel placements – this will keep the stereo image balanced. Then add acoustic treatments based on this layout. Generally, in small rooms [less than +/- 7,000 cubic feet] you should first install corner treatments [panels mounted across the diagonal of corners] to provide low frequency absorption. Then install panels to suppress SBIR distortion and at first reflection points to the listening position for early reflection control. Finally address overall reverb field strength [RT60] to reduce the amount of echo in your room to desired levels by adding additional panels as may be required. The smaller the room, the larger the percentage of the room surfaces will require treatment – so for very small rooms plan your installation to cover a significant percentage of the walls and ceilings with treatments. Larger rooms used for critical listening can be left with most of the room's surfaces untreated provided issues of low frequency control. SBIR, and early reflections are sufficiently addressed.
- **Corner Mounting** Mounting panels across the diagonal of corners provides a significant low frequency boost in low frequency performance. This is true whether the corner bridged by the panel is vertical or horizontal. Corner panels can be mounted vertically where two walls meet, or along a ceiling/wall corner, or a floor/wall corner. Tri-corners – where three of the room's surfaces meet – such as two walls and the ceiling – are the best places to trap low frequency sound. When corner mounting panels, DO NOT overly gap the corner panels from the wall but rather mount corner panels so that the backside edges are as close to the room surfaces as is practical.
- **Panel Thickness** Small and medium sized rooms with typical finishes and fixtures benefit from significant addition of low frequency absorption. When seeking to accomplish low frequency absorption, always use panels at least 4" thick. Such panels are capable of broadband absorption [effective on lows, mids, and highs]. A thinner panel such as the 2" RT422 can be used for other purposes such as the early reflection control, but in most rooms, it is advisable to use nothing but panels at least 4" thick such as the RT424 or the 4" Chameleon Bass Trap as the cost difference between thick and thin panels is small and the thicker panels will provide beneficial absorptive treatment all the way down to low frequencies whereas thin panels will not.

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- **Gapping Panels** When hanging panels to a flat surface such as a wall or ceiling, leaving a space or gap behind the panel will modestly increase low frequency absorption. This does not however apply to corner panels – for maximum low frequency absorption, DO NOT purposely gap a corner mounted panel from the wall but rather mount corner panels so that the backside edges are as close to the room surfaces as possible. Conversely, for panels mounted to a flat surface such as a wall or ceiling, leaving a gap behind the panel provides a modest gain in low frequency absorption. Even a small gap of a few inches can provide noticeable improved performance at low frequencies is implemented with a number of panels. Take into consideration aesthetics, site lines, projector clearance, preserving floor space, and other issues of practicality when deciding whether to gap wall or ceiling panels, and if so, how much. Don't mount ceiling panels so low you obstruct vision or the operation of ceiling fixtures, or gap wall panels so much you will always be bumping into them.

If you have any doubt as to where your panels should be mounted, please visit our web site at readyacoustics.com for placement advice, or use this link:

<http://readyacoustics.com/index.php?go=home.what-do-i-need>

