

Absorption, Diffusion and Bass Traps: the three basics.

How can absorption help my studio?

Acoustical foam helps to minimize flutter echo and slap, the two most common problems in rooms not specifically designed for music recording and performance such as your spare bedroom, basement, or garage (go into a very open room and clap your hands – this resulting sound is very bad for recording or mixing). Foam is easy to work with, simple to trim to size and cost-effective for virtually any budget. Foam will improve the sound picked up by your microphones and give you a more accurate monitoring environment, thus ensuring your recordings will sound better ("translate") wherever they're played. In a monitoring environment, foam allows you to hear recordings the way the artist intended without your room negatively altering the sound.

How can diffusion help my studio?

Diffusion keeps sound waves from grouping, so there are relatively few, or no "hot spots" in a room. Diffusion disrupts standing waves and flutter echoes without simply removing acoustic energy from the space or greatly changing the frequency content of the sound. Diffusion can make a small space seem large and a large space seem even larger. The proper balance of diffusive and absorptive surfaces varies with room size, function and desired results.

How can bass traps help my studio?

Low-frequency sound waves are so long - and thus so strong - that they are the toughest to control. This is true no matter whether you're attempting to block their transmission to a neighboring space or trying to absorb them to clean up the low-frequency response within a room. Controlling low-frequency sound is harder than controlling mid- or high-frequency sound and generally requires more effort and expense. What's more, low frequencies LOVE to hang out and cause us a lot of problems in corners, boosting the apparent amount of bass in our rooms by 9dB and making us think we have 3 times as much bass as we actually do. So, corner bass trapping is absolutely vital to smoothing out any room's sound. You may dig the way your favorite track "thumps" the kick and bass guitar in your living room, but in your control room, you need to hear the low frequencies for what they truly are.

Flutter Echo

A condition that occurs in acoustic spaces when two parallel surfaces reflecting sound between one another are far enough apart that a listener hears the reflections between them as distinct echoes. The audible effect is in many cases a sort of "fluttering" sound as the echoes occur in rapid succession. In smaller rooms it can take on a sort of tube-like hollow sound, as the echoes are closer together.