

How to Soundproof an Apartment to Muffle Your Wife's Drumming

Alexander Gelfand 06.21.07 | 2:00 AM

NEW YORK -- Last year, when my wife and I had to beg permission from our co-op board in Jackson Heights, Queens, to swap our one-bedroom apartment for a two-bedroom unit, only one thing stood between us and our dream of getting our one-year-old son into his own room.

Noise.

My wife is a professional percussionist. After three years of hearing her play marimba, djembe and conga in our living room -- and hearing me fumble around on our upright piano -- our neighbors wanted assurances that we would keep things quiet in our new home.

One resident, a kindly old man who had always greeted us warmly in the hall, told us that he and his wife would never have voted us into the building in the first place if they'd known how loud we would be. Others told us we had to guarantee their peace and quiet.

Determined to be good neighbors and to get that extra room, we volunteered to do some soundproofing. That's when things got complicated.

The measures that my wife and I took -- spending thousands of dollars (and countless hours) on consultants, contractors, materials and gadgets in order to turn our new dining room into a professional-caliber music studio -- might go beyond the needs of many people.

But the lessons we learned would benefit anyone who entertains thoughts of soundproofing their home.

Noise problems are typically complex and multifaceted, and as our acoustic consultant told us, sound is like water: block it from traveling along one path, and it will simply find another.

To make matters worse, applying almost any soundproofing measure is harder in practice than it seems in theory.

Soundproofing materials can be difficult to work with, contractors aren't always familiar with them, and the quirks of existing construction can derail even the best-laid plans.

Go Green

Home theater aficionados and soundproofing geeks are all atwitter over the latest in soundproofing technology: a gooey compound called [Green Glue](#) that converts sound energy into heat.

Green Glue compares favorably with conventional methods of soundproofing walls and ceilings, like factory-damped drywall. But it's much cheaper: A case of 12 tubes costs only \$175, and is enough to cover a decent sized wall.

Just remember:

Green Glue must be sandwiched between two rigid surfaces, which means laminating your existing walls with a layer of sheetrock that's been slathered with the goop. (Use the thickest sheetrock you can; mass helps block sound, too.) Green Glue takes time to cure. It may be 10 days before you notice a real difference, and 30 days before the stuff reaches its maximum sound dampening potential.

Green Glue works better at lower frequencies than many soundproofing options, but it isn't perfect. Expect some leakage from that 800-watt subwoofer.

False Ceiling, Real Results

Laminating your walls with Green Glue is a no-brainer. You can do the same to your ceiling, but for extra soundproofing, go a step further and drop the damn thing.

To create a drop or false ceiling, just attach furring channels to your existing ceiling and hang a bunch of sheetrock panels

from them. The dead air space between the original ceiling and the new one creates a sound-trapping chamber.

We took a different route -- and our upstairs neighbors haven't complained yet.

Attach some plain wooden strips to the ceiling, spaced two feet apart.

Screw a layer of sheetrock onto the strips.

Slather some Green Glue onto another layer of sheetrock, and screw that onto the first layer.

The result: a soundproof ceiling sandwich. Just make sure your ceiling can support all that weight before trying this at home.

This Carpet Sure Is Heavy

We weren't too worried about sound carrying through our floor into the laundry room below.

But our acoustic consultant warned us that an untreated floor could act like a giant drumhead, transmitting sound vibrations to our walls and hence to our ceiling.

To prevent this problem, which soundproofing pros call "flanking noise," we put down several hundred pounds of high-density, [mass-loaded vinyl](#).

Remember, more mass means less sound transmission. And at densities of up to 2lbs. per square foot, MLV is the next best thing to lead.

For best results, make sure the MLV isn't in direct contact with the floor. The experts advise floating it over a thin layer of open-cell polyurethane foam.

Sound can travel between the seams of adjacent strips, so seal them good with lead-impregnated tape. Or do what we did, and put down two layers at right angles to one another.

Block Those Exits

Doors are often the weak links in a soundproofed room. But there are ways to improve them.

Replace hollow-core doors with heavy solid-core ones to minimize sound transmission through the door bodies.

Add acoustic seals around the edges and [automatic door bottoms](#), which drop neoprene sound seals to the floor every time you close your doors, and retract them upon opening.

They are very cool, but a bitch to install, especially if your floors and doors aren't perfectly level. So be prepared to tweak, tweak, tweak.

A Few Last Tips

Fill any gaps or cracks with flexible, non-hardening caulk.

Mount anything that shakes – speakers, instruments, whatever -- on neoprene vibration isolation pads to prevent sound energy from flowing into your floor.

Hang some high-density fiberglass baffles on your walls and ceiling. They'll improve the acoustics of the room and absorb some of the noise that would otherwise leak out.

As our acoustic consultant told us, soundproofing is not one thing, but a bunch of little things that add up, decibel by decibel.

Our total labor and sheetrock costs were around \$4,000, with an additional \$3,000 for materials. (We also invested \$1,000 to have fiberglass insulation pumped into our walls to give the apartment a smidgen of sound isolation before the real work began.)

The results were impressive. We had originally been concerned about sound leaking directly up through our ceiling, and out through the doors into neighboring, un-soundproofed rooms. After the work was finished, high-frequency stuff like the upper range of Ingrid's marimba simply wasn't audible from our upstairs neighbor's apartment, and low-frequency stuff like bass drum hits were much, much softer. I occasionally rehearse with a piano trio in a professional music studio, and our home soundproofing job is every bit as effective as theirs.

Of course, this didn't come easy. It took weeks for the job to be completed, and many, many frantic calls and e-mails to our acoustic consultant, not to mention daily huddles with our contractor. Our floors weren't level, so we had to finesse the automatic door bottoms for days to get them to work right; the Green Glue folks disagreed with our consultant over how to handle the drop ceiling; it took forever to find an MLV package that fit our budget; and everyone had a different opinion on how to install the door seals, including our consultant and the manufacturer. But it did get done, and at remarkably little cost to our marriage, despite the stress -- probably because I handled all the soundproofing details, while Ingrid managed the rest of the renovation.