

## **Acoustiblok application method for finished rooms**

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After discovering the Acoustiblok product I was immediately interested in installing it into our home theater that I was in the process of remodeling. In the existing basement area, the ceiling and three walls were already framed, insulated, and drywalled. After studying the application methods recommended by Acoustiblok at the time, I was disappointed to see that there was really no elegant way to address soundproofing “finished” walls.

To get the walls back to the recommended application method for new construction (bare studs) would require demolishing all of the existing sheetrock, and the attendant dust and debris removal. The only other apparent alternative was furring out the existing walls again with 1x or 2x lumber, and applying the Acoustiblok “conventionally”. This was going to be labor and material intensive over and above the Acoustiblok application and the fresh drywall layer to finish the room. It would also make the room smaller - not by a lot, but smaller still.

I was also considering hanging techniques and in the process of deciding whether to use staples I wondered how much the Acoustiblok would tear under its own weight -particularly when hanging the ceiling. I was considering using a cardboard drywall shim as a gusset to help hold the staple in the Acoustiblok. It struck me while looking at the shims that they could be used as a minimal furring strip. I decided to try an application method in my project where the Acoustiblok “floats” between two drywall shims, which are nominally .125 in. thick. Sufficient beneficial slack can be maintained in the Acoustiblok even with this minimum air gap. This system would be sandwiched between the existing wallboard and the fresh drywall on the ceiling, soffits, and the three existing walls. The newly added room wall would get a conventional application over 2 by 6 studs with R-19 insulation.

I committed to using a narrow crown air stapler. Stapling with air allowed the pressure to be adjusted for the desired drive, depending on staple length and how much material was being attached at that point. (In the case of going through the maximum of shim-Acoustiblok-shim-wallboard the 1.5 in. staples were getting plenty of bite.)

The production process we settled on worked out to be quite simple, and after a trial it enabled myself and two very able carpenters to hang the entire 13 by 22 ft. room including ceilings and soffits in seven hours. We started by mapping out the framing concealed behind the walls and ceiling of the entire room. Working by tapping out the walls, using a stud finder, and the occasional tell-tale nail we

located all the studs, plates, and nailer blocks in the room. One worker followed the “layout” man with the stapler and shims, stapling up a shim over the centerline of every framing member.



**Photo 1 – First layer of shims and first course of Acoustiblok and top shim installation. (Note the roll dispenser in the background made from scrap 2x4,  $\frac{3}{4}$  plywood, and a length of galvanized pipe. The pipe rests in V notches in the plywood uprights, making it easy to load new rolls.)**

With the first shim already in place the process of hanging the Acoustiblok was conventional, except for positioning a top shim over the Acoustiblok when stapling. With practice we had one worker fastening the top shim with the Acoustiblok while the roll is managed by the two other workers. With practice feeling the shim underneath the Acoustiblok and aligning the top shim becomes easy, and stapling is fast and clean. Setting the air pressure correctly will leave the staple countersunk slightly into the shim material, decoupling the fastener from the sound absorbing system, and not so forcefully driven to tear the cardboard and stress the Acoustiblok.

Sealing the Acoustiblok properly may be more work than hanging it. Not really, because you're not lifting it again, but careful preparation is required to fully seal your Acoustiblok sheets. I was unable to locate the 3M 468MP tape recommended by Acoustiblok in my area. I found a very heavy PVC (20 mil) tape used for pipe wrap (direct burial of iron pipe) that looked promising and is available in 1, 2, and 6 inch widths. While I liked its workability and strength, its adhesive properties were lacking. (Note, I found at least 3 brands of pipe wrap

tape in my area, some is only available in 10 mil, and one manufacturers tape was clearly superior to the others for this task.) Cleaning the surface of the Acoustiblok with MEK, pure isopropyl alcohol, or other solvent of your choice is essential to get anything to stick to this PVC sheet. I taped out the entire room with 2 inch pipe wrap tape before I realized that it was going to need some help for the inside and outside corners to survive. While it held well in flat application, it was not going to stay for the life of the job in or on the corners. Another tape I found with extraordinary adhesive properties is 3M Metal Repair Tape. It is a strong foil that is temperamental coming off the roll, prone to tears, and almost impossible to form into neat inside corners. But does it hold. So I ended up using it to overlay the edges of the PVC tape to stabilize it. What a combination this turned out to be, particularly in the inside corners, where the workability of the PVC tape was exceptional compared to the foil. The overall seal of the joint is dramatically enhanced, as 4 inches of seal are created by lapping the 2 inches of foil tape over each edge of the 2 inch PVC. I completed every seam in this manner, even the flat seams that the PVC tape appeared to be handling alone.



**Photo 2 – Finished (rear) wall shown in Photo 1. The foil tape on the flat seams are 4” wide, two 2” applications over the edges of 2” 20 mil PVC tape.**

The rest of the sealing tasks were completed as recommended by Acoustiblok. Polyurethane caulk (50 year) was used where the sheeting meets the concrete slab. For other caulking around junction boxes, light cans, etc either the 3M marine 5200 recommended by Acoustiblok or a high performance adhesive caulk like Sikaflex 1A works fine. I used both for various reasons.

I haven't finished the door installation and floor Acoustiblok treatment yet, but the progress thus far has been rewarding and appears technically solid. Once the room is tight I can hopefully measure things. Then the fun of acoustically tuning the interior volume will begin!



**Photo 3 - finished ceiling showing can lights and soffit detail**

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