Subject: Pi midhorn: how thick to be effective?
Posted by JCDC on Fri, 08 Feb 2013 19:16:12 GMT
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Playing with some higher WAF ideas for the midhorn

The Eight Pi plans say 5/8 and 3/4

How about 1/2?
3/8?
1/4?

Ply or MDF?

... Plexiglass ...?

Subject: Re: Pi midhorn: how thick to be effective?
Posted by Wayne Parham on Fri, 08 Feb 2013 21:25:27 GMT
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You know, you can really reduce panel thickness with the right bracing. Bracing is usually much more effective because the brace is in compression or tension, whereas the panel being braced is in shear. It's a lot easier to bend a panel than it is to compress or stretch it, so making it stronger by virtue of thickness isn't as good as using braces. Of course, we usually do both.

You can also use constained layer damping, which allows really thin materials to act as barriers. So a thin CSD panel with braces could be used. Just two thin sheets of some rigid material with viscous material in between. The viscous material provides resistance to shear deflection, and so this plus the bracing makes a very solid construct.

Subject: Re: Pi midhorn: how thick to be effective?
Posted by JCDC on Sat, 09 Feb 2013 03:00:10 GMT
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I'm talking just about the naked mid horn not the entire bass cabinet or cover for the midhorn.

Ok, so if I brace (1 in the middle of each section) can I get away with 1/4 mdf or paneling?

Will the horn still work (constrain) down to it's proper 200Hz or will the lower frequencies (400-200) simply pass through the horn as if it wasn't there?

How about 0.1" plexiglass? That's my dream! Visually, just the 1ft by 1ft box for the alpha/delta 10 with the 4.5x4.5 square in the front ... and then a plexiglass mid horn with just the minimal bracing to make it function as a horn and not ruin the transparent look!

All you'd see out of the corner of your eye is the 1x1 box and the midhorn would just visually melt into the wall! +6 WAF!

(Why do I get the feeling you're going to tell me this won't work?!?)

Cheers,
Jeff

Subject: Re: Pi midhorn: how thick to be effective?
Posted by Wayne Parham on Sat, 09 Feb 2013 16:30:10 GMT
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It's really hard to say how thin you can go. And like I said, it also depends on the material you choose.
