Subject: Studio 2 Pi cabinet construction questions
Posted by Edwin on Sun, 09 Jun 2002 10:11:24 GMT
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To Wayne and the rest of the guys,I found a cabinet maker who will make the cabinets for me. I opted for mahogany. In line of this, I have the following questions:1. As this is my first time in speaker building will I have any problems installing damping materials, drivers, wirings etc. in a finished cabinet? Or do I have to install everything inside before I close the back?2. Does the Studio 2 Pi require bracings? If so, how?3. What is the size of the connector panel hole? Is the 2.875" wide X 2.175" tall true for all connector panels included in the kit?4. Also will changing my dimensions to 30.5" X 14" X 8", which has the same volume of 1.36 cu.ft. compared with the original dimension of 22" X 15" X 10" pose a problem? 5. Other suggestions or modification Thank you for your patience in answering a newbie like me. I hope to build a 4Pi if this initial project succeeds :-)Edwin

Subject: Re: Studio 2 Pi cabinet construction answers
Posted by Wayne Parham on Sun, 09 Jun 2002 18:39:30 GMT
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I prefer MDF or baltic birch to solid wood. You can veneer it with whatever you like. Unless you can model the cabinet or test it, it is usually best to avoid having all dimensions the same or multiples. This prevents standing waves from aligning along more than one axis. Also, when I build speakers, I glue all the panels rather than making the rear panel removable. I install all the components, crossover, acoustic insulation, etc. through the woofer hole. I generally brace any cabinet that is larger than about 2 feet in any dimension with cross-braces every 18".

Subject: Re: MDF better than mahogany
Posted by BillEpstein on Sun, 09 Jun 2002 22:45:35 GMT
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I've never known you to offer an opinion that wasn't backed by science and I'm very curious to know about what probably amounts to MDF vs. most any solid hardwood? I don't really have an opinion one way or another but I do believe that my solid maple shelves have an influence on the sound of my CD player.Another issue you touched upon, cabinet size: are low frequencies not concerned with standing waves? You see a lot of sub-woofer designs of 18X18X18 and 24X24X24, etc. My P'itanic is 22.5 cubed.I don't hear any particular note boom and distortion seems very low. Why is that?

Subject: Re: MDF better than mahogany
Posted by Adam on Sun, 09 Jun 2002 22:50:22 GMT
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I'm not sure about your other questions, I guess I'll let Wayne cover that, but as far as standing waves go, they only happen at higher frequencies.Standing waves will begin to occur at the frequency whose wavelength is equal to the longest dimension of your box. So in your case, 22.5", which is a frequency of 603 Hz. Obviously well above your crossover point, so you don't have to worry about them!Standing waves only become a problem when the speaker is playing frequencies which are close to or above this threshold. So they will only be a problem with woofers running up to high frequencies or woofer enclosures that are absolutely humongous.Adam

Subject: Standing waves and resonance
Posted by Wayne Parham on Mon, 10 Jun 2002 00:00:49 GMT
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The reason that particle boards and laminates are preferred for building loudspeakers is that they have several different fibers that are oriented in different directions. So the cabinet panels are less prone to resonance.About subs, Adam was right. Standing waves are as much an issue for subs as anything else, but they are used at frequencies where wavelength scale is measured in feet. If your cabinet were several feet across then standing waves might set up but when crossed over in the double digits, small cabinets like you've described are nowhere near large enough for modal behavior to occur.