Subject: Non Metalic Chassis
Posted by SteveBrown on Tue, 20 Nov 2007 23:52:59 GMT
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My last power amp, a SET 45 was built on an all wood chassis, and I think it turned out pretty nice. I was wondering if anyone had read the article in the link below, and what your thoughts are? Also, I'd love to see some variations on the non-metalic chassis, any creative deisgns out there? Seems like if we're not limited to fabricating metal, a lot of different stuff could be done.
Non Metalic Chassis

Subject: Re: Non Metalic Chassis
Posted by Wayne Parham on Wed, 21 Nov 2007 02:47:46 GMT
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The problem of the eddy currents in covers of magnetic devices is very real. Larger currents create larger fluxes which make larger eddy curents. I did industrial control designs for most of my early career and they had high-power circuits controlled by computers, often in the same physical chassis. Most of them had to have isolated grounds, with high current devices electrically isolated. The chassis grounds were separate because noise in the high current side would disrupt the low current side. Transformers, motors and solenoids were the worst offenders.

Subject: Re: Non Metalic Chassis
Posted by SteveBrown on Wed, 21 Nov 2007 11:47:06 GMT
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Thanks for the insight Wayne. So besides possible estehetics, there can be technical advantages to using chassis that don't propogate eddy curents. I guess one of the things that peaked my interest in this is that I consider myself a better wood worker than metal worker. On top of that, seems to me many of us are out buying large maple and other wood blocks, specail ebony feet, etc. to help improve the "sound" of metal chassis (ringing, etc). So why not start with the end in mind (ala Covey) and begin w/wood? Granted, the material thickness is more of an issue to deal with in mounting components designed for a 0.065 thickness... but can be over come. One of the nice tings about the thickness is that under-chassis screws can easily be hidden, whereas on a metal box they must stick through. I think my next project will be an Eams style chassis.. now, now to bend Baltic Birch?

Subject: Re: Non Metalic Chassis

Posted by Wayne Parham on Wed, 21 Nov 2007 19:05:52 GMT
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Sometimes metal shielding can reduce noise. Other times it acts as a coupler. It depends on the electrical and magnetic properties of the circuit and the parts in near proximity to each other.

Subject: Re: Wiggle Wood
Posted by Bill Epstein on Thu, 22 Nov 2007 11:15:43 GMT
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Thanksgiving greetings from Asheville!Flexible plywood is available (wiggle wood) and kerf bending is always an option. Make a form from layers of MDF and glue and clamp layers of 1/8" easily bent wood like mahogany or ash. Use Resorcinol aka PPR to minimise glue line creep.No problem.
Wiggle Wood

Subject: Re: Wiggle Wood
Posted by SteveBrown on Thu, 22 Nov 2007 13:21:38 GMT
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Thanks for the tip, Bill. And a happy Thanksgiving to you, and your loved ones!

Subject: Tubes and wood.
Posted by Shane on Fri, 23 Nov 2007 05:06:49 GMT
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I'm way more comfortable working with wood as well, but only because I don't have the proper tools for metalworking.My concern with wood chassis' and tube amps is the heat generated. Especially if you're using a large power resistor or something similar that may let go.

Subject: Re: Tubes and wood.
Posted by Jeffery L on Thu, 27 Dec 2007 21:42:39 GMT
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What would stop you from you using phenolic sheet? It seems the mechanical and electric properties would be ideal. What would also stop you from using a thin copper, aluminum, or steel sheet on the underside of the chassis for shielding or ground if needed?

Subject: Re: Tubes and wood.
Posted by Shane on Thu, 27 Dec 2007 23:39:07 GMT
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Nothing stopping me from using a metal or phenolic sheet on the underside. My concern was with the heat off the power or rectifier tubes on the topside. It would take a lot of heat to actually combust the wood, probably more than a tube would put off...but still.

Subject: Re: Tubes and wood.
Posted by Jeffery L on Fri, 28 Dec 2007 12:54:16 GMT
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I was actually talking about using the phenolic as a mounting surface. It does come in a lot of colors and I would imagine that it could be artistically incorporated into a chassis design.I have seen a light bulb that sat within inches of a piece of plywood and it did char halfway through the plywood, although it never did burst into flames.I would think it would be okay to use an all wood chassis, I don't think there is enough heat to cause it to combust.

Subject: Re: Non Metalic Chassis
Posted by RC Daniel on Fri, 08 Aug 2008 05:26:53 GMT
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Hi SteveI have a cab waiting so will leave you with this link...DNM have been abour non-metal chasis for a while - take a look around.Gotta run.
 DNM - They don't like metal!
