Subject: Re: 4 PI by Andy
Posted by Wayne Parham on Sun, 20 Jan 2013 23:11:19 GMT
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There is no downside to lining the cabinet walls with acoustic damping material. I've had best luck with R13 insulation. So feel free to add it.

If you're concerned with midrange, you can also install a sheet that spans the cross-section. It seems to work best at midrange frequencies when the cross-section sheet is between woofer and port.

But if you're going to use it as a prosound sub, I would probably discourage the cross-section sheet because there's a lot of air moving at full tilt. A prosound sub should be purpose oriented, and big boxes with big ports should be used without anything impeding airflow between them.

A box with 36" internal dimension will have a standing wave at 180Hz. It will have others too, but the longest dimension sets the lowest axial mode. So that's the one to watch.

I wouldn't be comfortable using that as a flanking sub unless I measured it and knew it wasn't making any artifacts all the way up to 200Hz.

And that's really the issue here - I'm not saying standing waves will create response anomalies, I'm saying they might. If signals are presented to a woofer in a cabinet with at least one 36" dimension, then standing waves will exist inside the cabinet. If the woofer or port sits on a pressure node, then those standing waves will cause a response peak. So you would probably want to make sure the port and woofer are positioned in such a way that response is good. That's what we do when designing the mains too, or at least, that's what I do. It's why I tell people to be careful when contemplating baffle changes and mods.

This is basically a measurement thing. Measure the box and look for ripple above 150Hz. If you don't see any, then there's nothing to worry about. If you do see ripple, then you can either change the baffle and put the port and/or woofer in a different location, or you can limit the frequency range, and don't send signals at or above the anomalous range. Low-pass it below the frequency where it gets wonky.