Subject: Re: R11/R13 Fiberglass Insulation and Environmental Health
Posted by Wayne Parham on Tue, 06 Sep 2011 16:02:20 GMT
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I absolutely hate working with the stuff. I've spent enough hot summer Oklahoma evenings in an attic running cables to learn to absolutely loathe fiberglass insulation. Nothing worse than being in a hot, sweaty attic. Even just the few minutes putting the R13 in a loudspeaker in a nice cool air-conditioned room kinda sucks.

But I've tried other damping materials over the years and find most to be lacking, some really bad. What I often find in other padding materials is they are less effective at attenuating midrange. Sometimes not only that but they can also modify cavity resonance and detune the box. I'm not sure if the problems with other materials are that the fibers are too heavy and/or rigid to vibrate and absorb energy or if it's more of a bulk/mass thing where the sheets just acts like a solid block. Could be a little bit of both. But whatever the case, I find good old fiberglass insulation works best.

Fiberglass insulation may be a little irritating to your skin when you install it, but once it's there it doesn't enter the air. The sound of the loudspeaker may vibrate the fibers, but they don't break free. And glass is a quite benign, really. It does not cause cancer, and is probably one of the safest fiberous materials to use. It's not like asbestos, but probably gets associated with that in some people's minds because it looks similar. So I think it is probably the best, safest and most effective material to use for this purpose. I find no downside to using the stuff.

After the damping material is installed, once it is in the speaker and has settled down, I don't object to it at all. I don't find that it sheds enough particulate to matter. There's far too much other particulate in the air for me to get excited about the insulation inside a speaker. The insulation in a loudspeaker pretty much just sits there, even when the cabinet is vented. Subs rarely use insulation, so the kinds of cabinets that pump a lot of air don't have the stuff in them. Speakers used as mains don't have the same kind of displacement.

One look at the HVAC ducts in a home, the way they're "sealed" with duct tape, is enough for me to realize that's ten-thousand times more prone to pushing R13 into the air supply than a loudspeaker. So my thinking is if you're worried about fiberglass in the air, focus on that first. If you can get the environment so clean that the tiny particulate produced by a loudspeaker makes a difference, I think you would pretty much be living in a sterile Class 100 cleanroom.