

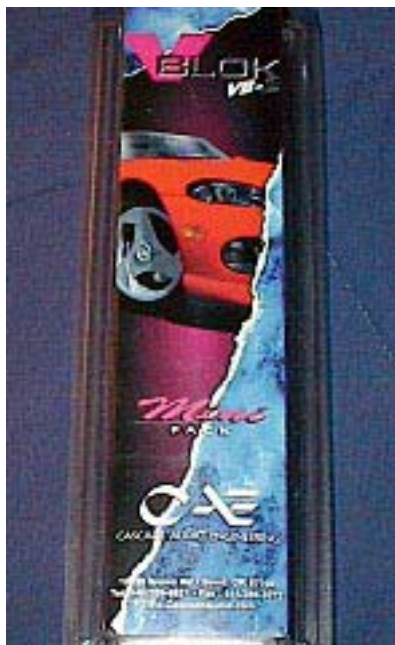
Sound Dampening Part III

Introduction:

When I wrote my first sound dampening article here at MHW I was unable to locate any sound dampening material specifically manufactured for computer cases. That's not too say that somewhere someone wasn't selling some but I was unable to locate any. I had to improvise somewhat and I went off label (use of of a product in a manner other than originally intended) ended up with a cheap can of consumer grade rubberized auto underbody spray. While this worked somewhat at reducing the case sound levels the product I chose had some serious drawbacks. It wasn't paintable, it smelled awful, it was hard to apply being both lumpy and runny at the same time.

In my second sound dampening article, I used a commercial grade off label dampening product, which was provided by our very own Insulglass, who at the time was just Dave, a generous reader (Remember this name there will be a quiz later). The SOSDM (Spray-On Sound Dampening Material) was flawless and had none of the issues that the generic stuff did. The SSDM (Sheet Sound Dampening Material) worked well, but was also somewhat difficult to apply, needing a heat gun to achieve a truly professional quality installation.

That brings us to Part III. The SSDM material we are looking at today is flexible, comes in a roll, and doesn't require a heat gun for installation. It was one of four different kinds provided by Dave Gumienny, President of CAE (Cascade Audio Engineering). Thanks Dave. Some of the other stuff he sent will be showing up in other articles. The reason I have chosen to use the VBlock VB-2 instead of one of the other types he also sent is that is truly is ease of installation. Two of the other products would work well in computer cases but they require a heatgun for installation, the fourth product is unsuitable for use in computer cases because it is also very insulative and raised my case temps too much.



Setting A Baseline:

Unlike past SSDM articles here, this time I even have a DB meter for comparison. That's right, this time there will be no more "Product A sounds louder than Product C", but rather discreet easily comparable db rating. Establishing a baseline sound level for comparison purposes with my new DB meter proved quite enlightening. Let me elaborate: Most every fan I tested measured at least 10 to 12 DB higher than the manufacturer stated specs. After testing several different fans from various manufacturers, the only

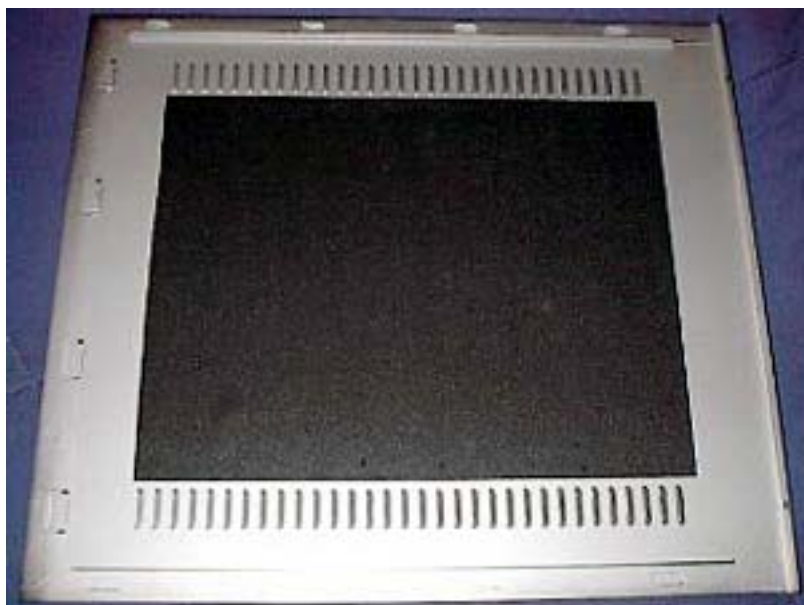
conclusion I can draw from this is that most manufacturers are simply lying about how many db's their fans produce. For example a 7K 60mm Delta screamer is rated at 54db. Well, I measured 67db. For comparison, my 13,500 BTU room air-conditioner only measures 70db.

Product Specifications:

Here are the product specifications shamelessly copied from a color brochure CAE sent me. VB-2 is a flexible, odorless and lightweight, mineral filled vinyl-copolymer damping sheet. It was originally formulated to handle the demanding extremes of aircraft vibration and noise control. It has twice the damping and less than half the weight of asphalt damping materials and the ability to handle continuous temperatures to 250 degrees Fahrenheit. How does it work? Both VB-2 & VB-2HD operate as visco-elastic dampers. By heavily loading silica and quartz into a flexible vinyl carrier VB-2 efficiently converts vibration energy into low level heat. The flexible nature of VB-2 enables it to mold and conform to irregular surfaces. This attribute allows VB-2 to make 100% surface contact with the vibrating structure, maximizing the total damping effect. The modified acrylic peel and stick adhesive will maintain an excellent bond at temperatures in excess of 250 degrees Fahrenheit.

Testing:

Before I applied the VBlock VB-2 SSDM to my case the db meter read 68db, 6 inches from the outside of the sealed case. The hardest part of the installation is merely trimming the product to fit where you want to put, after that you peel off the back and stick it to the case. The VBlock VB-2 that you see in the picture on my side panel was installed tool free just using my hands and a rag. You may wonder why I didn't cover more of this side panel, the reason, which I learned the hard way is that if you go over too close to the edge the panel won't fit back in, the reason I didn't cover up the louvers is obvious, it would greatly effect my case air flow.



After installation of the VBlock VB-2 SSDM, which consisted of ~ 50% coverage, the meter read 66db. While 2db is not an earth shattering reduction it was noticeable. Keep in mind if I didn't have a window in one of my side panels and could have achieved 80% or 85% coverage I would imagine the difference would have been on the order of a 4 or 5db sound reduction. I also noticed no case temperature increases with the VBlock VB-2, that was certainly welcome news.

Conclusion:

I started this series of sound dampening articles here because of my disgust with the sound level modern performance systems have reached, and my desire to see what a DIY approach could do to help solve this

problem. Because at the time few of the big manufacturers seemed interested in this subject. The methods I have used are certainly not the only ones available. Be creative. Maybe this article will lead you to some solution of your own. If you feel its a good one drop me a line. One reader even wrote in to me that he keeps his PC in the closet to fight off the noise.

If you have noticed that this long winded conclusion sounds a lot like a good-bye, well, it is for me. After three articles on this subject I feel that for now, I have said all I have to say. So, I will be turning this series over to the very capable Insulglass. Yes, for those of you paying attention earlier, that's former generous reader Dave. Don't worry, you are in good hands. Dave, you see, is much more ambitious than me (don't tell him I said so, though he may get a big head), and his first sound dampening article will be a multi-product shoot-out.

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