

The Deadening

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Admin · Top contributor · September 10, 2023 ·

Alright. This has come up a lot, and so it was time to test it. This has been in the works for a while, but I had a very small amount of time this last Tuesday to run these tests. Videos will follow, including a full breakdown of the heat testing and vibration damping testing, as well as a full, uncut video of the vibration damping test process.

There are further tests coming this week, but I am going in the order of products and tests conceived as I have time. This will will be a product that is supposed to be what Tesla uses, Vibrofiltr, and another test of Soundskins Pro and Soundskins Classic.

I've said repeatedly that budget products may not always be cheaper if your intentions are to get the same results using more product. What does that mean? That it may cost more to buy enough of a cheap product to match the performance of a better product. That idea has always gotten push back, so I decided to take to of the highest reviewed "budget" products on Amazon, and compare it to the current highest performing (and highest cost) products.

I ran new tests with both Resonix, and the new Resonix with the thicker constraining layer (from here on out called Resonix Mega for simplicity). I then ran some tests with Killmat 80mil and Noico, and added product until they matched or came very close to matching performance of both Resonix products. I then weighed each, and calculated cost. Heat testing is currently ongoing to be thorough.

What I ended up with was a 5.5"x5.5" square of both Resonix products. That equates to 25% coverage. I knew 25% coverage wouldn't cover it with either Killmat or Noico, so I cut those products to 10"x10", which equates to just over 82% coverage.

To start, Resonix is $8.50/sq foot, and Resonix Mega is $11.75/sq foot. Killmat 80mil is $1.38/sq foot. Noico is $4.02/sq foot.

Resonix reduced the resonant frequency of the test panel's amplitude by 16.50db.

Resonix Mega reduced the resonant frequency of the test panel's amplitude by 19.29db.

The first layer of Killmat reduced the resonant frequency of the test panel's amplitude by 9.00db.

The second layer of Killmat reduced the resonant frequency of the test panel's amplitude by 16.18db.

The third layer of Killmat reduced the resonant frequency of the test panel's amplitude by 20.68db.

The first layer of Noico reduced the resonant frequency of the test panel's amplitude by 11.88db.

The second layer of Noico reduced the resonant frequency of the test panel's amplitude by 19.13db.

Going off these tests it takes approximately 6.61 times as much Killmat 80mil to match the performance of Resonix. And it takes approximately 9.91 times as much Killmat 80mil to match the performance of Resonix Mega. This puts Killmat's pricing at $9.12 to match the performance of one square foot of Resonix, and $13.68 to match the performance of one square foot of Resonix Mega. It takes 429 grams of Killmat to match the performance of 105 grams of Resonix Mega.

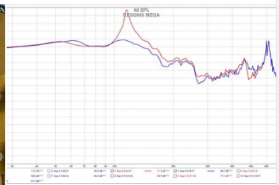
It takes more than 3.3 times the amount of Noico to match the performance of Resonix. I did not get an exact amount, as that would have required more trial and error than I had time for, and because even at 3.3 times as much, Noico became significantly more expensive than Resonix. It takes 6.61 times as much Noico to match the performance of Resonix Mega. At that point, it costs $26.57 to match the performance of one square foot of Resonix Mega. It takes 437 grams of Noico to match 105 grams of Resonix Mega.

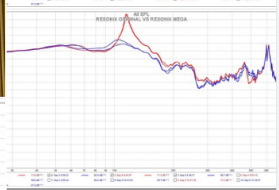
Lastly, the waterfall plots tell the rest of the story. Killmat appears to be acting less as a constrained layer damper, and more as a stiffening product, especially as layers are added. This is in contrast to Noico. When looking at the waterfall plot, you can see that despite Killmat reaching a reduction of 20.68db with 3 layers, it takes longer for the panel to stop resonating than it does with Resonix Mega. It also was the only product to raise the resonant frequency of the panel, and did so further with each additional layer.

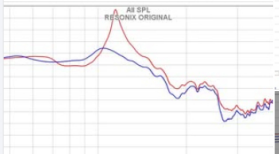
For the graphs below, the following are the color codes.

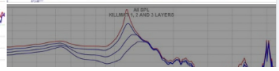
Red is ALWAYS the bare metal test. Blue is ALWAYS the damped test, EXCEPT on the two frequent response graphs showing the Resonix, Resonix Mega, and Killmat/Noico. In those cases, Red is still bare metal, blue is either Killmat or Noico, and Resonix is Green and Resonix Mega is Purple.











About

This will be the go to group for objective data and facts regarding vehicle sound deadening techniques and products.

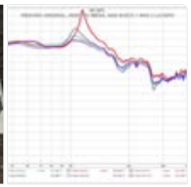
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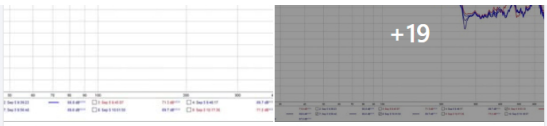








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Comment as Nick Apicella

Anton J Miller
Do you have a video on how to properly interpret these graphs?
1y Like Reply
Chris Purdue replied · 7 Replies

Nicholas Conover
good stuff
1y Like Reply 2

Steve Krempp Top contributor
Why would you not do the same size squares for a true apples to apples comparison?
1y Like Reply
Nick Apicella replied · 4 Replies

Tristan Young
Well that sucks. I just did 3/4 of my car in 1 layer killmat
1y Sad Reply 2
Matt Bryant replied · 5 Replies

Nick Apicella Top contributor
Love to see it ❤️
1y Like Reply 3

Rick Quattlebaum
Thank you for the updated testing results.
1y Like Reply 2