

Test Data Sheet



Equipment Vibration Protectors

Test Equipment & Set-up

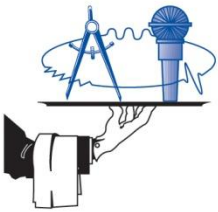
The vibration transmissibility tests for the AV RoomService EVP isolators were conducted at the accredited Owens Corning Acoustics Lab using the following calibrated equipment: B&K Pulse System, 2635 charging amplifier, impact hammer (with plastic head tip) and accelerometer waxed to the concrete lab floor. Loading weights were bull's-eye leveled. The test samples were placed between the accelerometer and the weights.



Test Procedure

The force sensor in the impact hammer in conjunction with the movement sensor of the accelerometer serves to provide a frequency and amplitude measurement of the energy that is transmitted through the test sample. The system ensures that the structural characteristics of the hammer are filtered out and do not influence the measurement data. The hammer strike is extremely light (about the force of a pencil tapping a desk). A strike that is too hard, too soft, or a double hit is detected and rejected by system parameters.

Each test sample was load tested incrementally from below to above its estimated ideal load range. Each test result is an average from five clean tests. Tests indicating poor or questionable coherence results were not collected. Tests were for vertical single degree of freedom movement, and a bandwidth of 1 – 500 Hz. The single degree of freedom set up provides the most basic control system, eliminating the possibility of unique



and/or additional material influences. The 500 Hz. upper limit was deemed high enough to prove continued isolation, yet low enough to show low frequency detail, which is of primary interest.

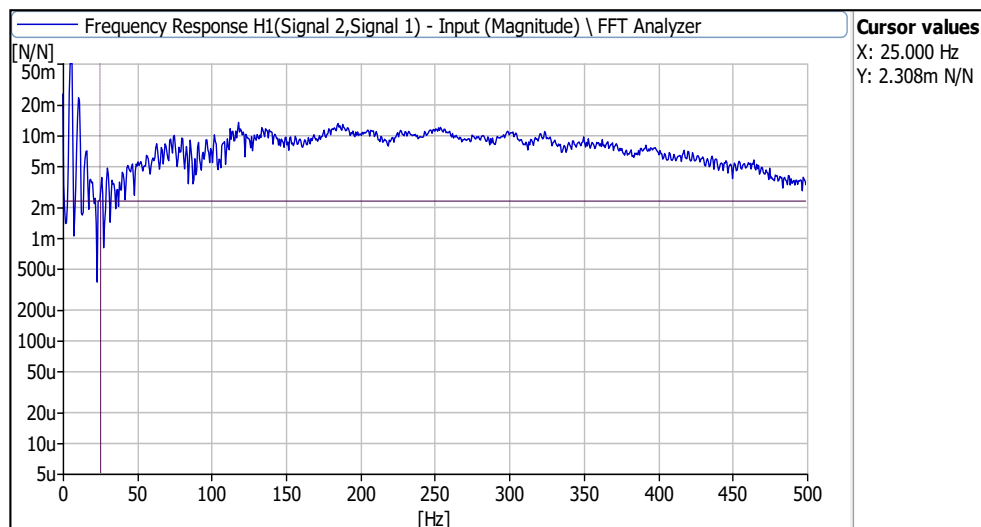
Test samples were randomly selected. A sample representing each density, size and finish type was tested through its applicable load range. The vibration energy transferred from the impact, through the isolation sample, is received and recorded by the accelerometer.

Test Results

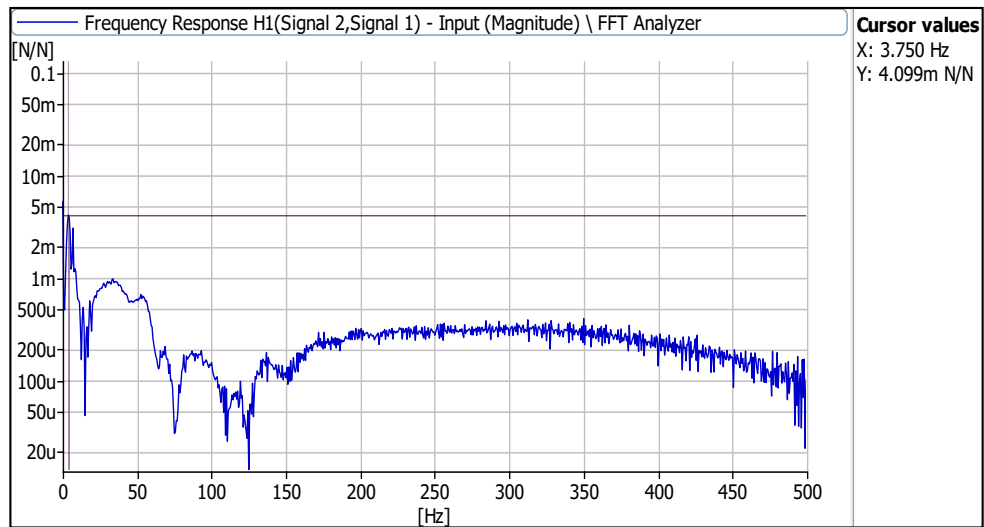
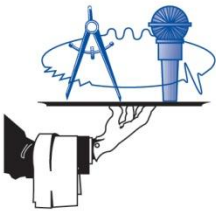
The following results represent “typical” results. The natural frequency for most of the EVP tests were between 3 and 4Hz. The highest natural resonance configuration found was 12.5 Hz., which only occurred for one particular load, for one particular sample type. This is why we can say that the EVPs conservatively eliminate >80% of the vibrations transferred from 5 – 14 Hz and up. Note in the test measurements how quickly after natural resonance the energy is dissipated when incorporating the EVP.

Ideal loading range per sample size and density type:

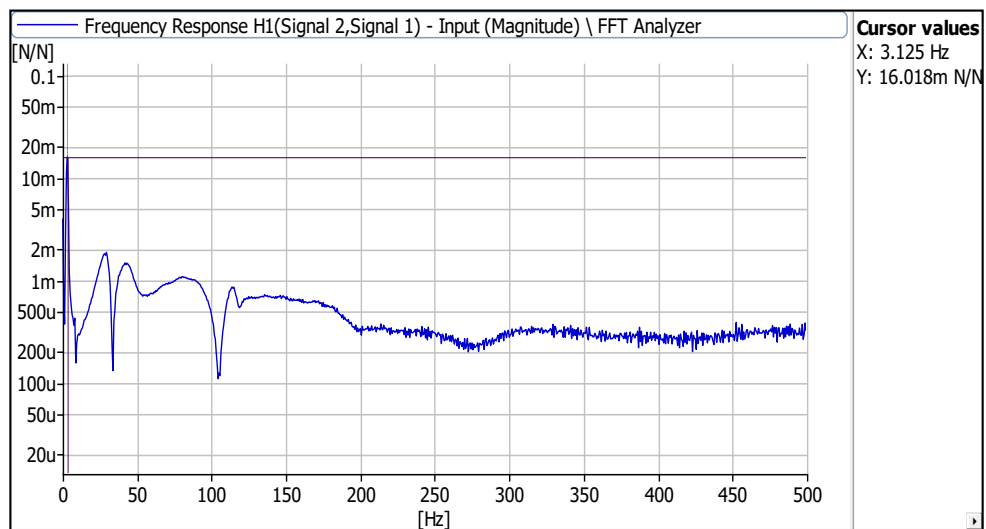
	lbs.
2" medium	2-5
2" heavy	3-19
4" medium	8-20
4" heavy	12-76



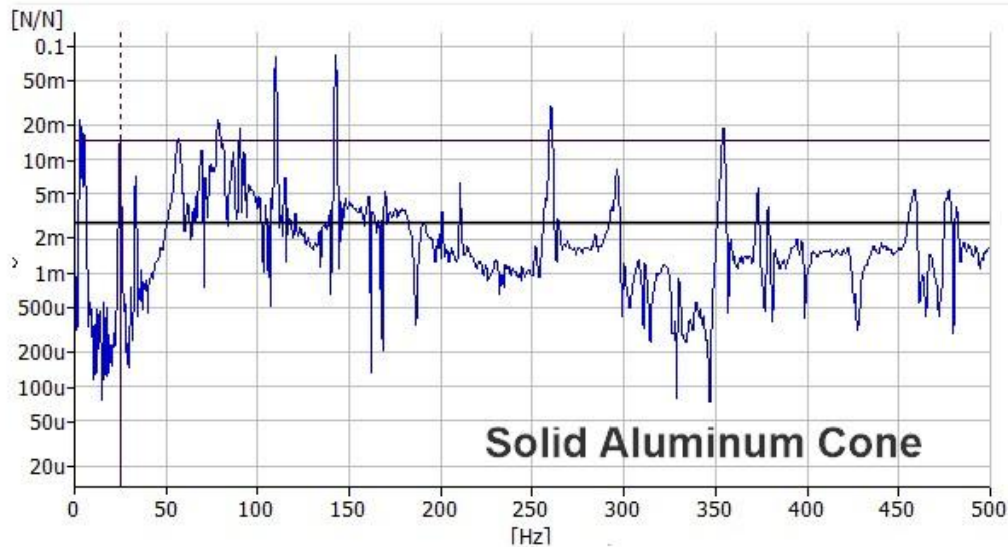
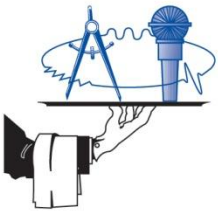
No Isolation



2.5 lb. load on EVP 2" square, Medium density, Rubber top and bottom



15 lb. load on EVP 2" square, Heavy density, Rubber top and bottom



10 lb. load on Solid Aluminum Cone

Test Conclusions

It should be very apparent from the measurement directly above that solid materials transfer significant energy to whatever they are in contact with. Different solid materials transfer different energies depending on their densities, size, shape, and in conjunction with the characteristics of the material(s) it is resting on. Some frequencies are attenuated, while others are amplified. This coupling is the reason why wood, metals and even rubber can sound different, but never neutral. In addition, solid materials will deliver a unique response for every system configuration; coupling material, resting platform, equipment weight, etc.

The EVPs offer a neutral, predictable, repeatable, reliable solution to decouple and isolate audio equipment from transferring or receiving vibrations.