



TECH NOTES # 1

VIBRATION AND SEISMIC ACTIVITY

Our Isolation Gaskets material exhibits both liquid (viscous solutions) and Solids (Elastic Materials) properties making them suitable for both suspension and compression with good shock absorption, good memory, vibration isolation combining them in a more stable condition and longer life:

Consider these advantages.

- Lower Creep Rate in comparison to Rubber, Neoprene, Silicone etc.
- Superior damping efficient over a wider temperature range
- Unlike fluid based shock absorbers or foam products our Product absorbs shock efficiently over millions of cycles
- Eliminates the need for metal springs to return the system to its equilibrium after absorbing a shock

Typically in Projector or Camera Installations poor image quality will benefit from the use of our Product as the problem is often caused by vibrations from an external source, not just HVAC units installed on a roof but can be from foot traffic on an upper level when a Projector or Camera is installed on a lower floor. Other types of vibrations are sometimes caused by poorly routed A/C ducting or similar.

In some cases, close proximity to a Railroad or Manufacturing Operation or Similar can often be a source.

It does not matter whether the Projectors and Cameras are in either suspension or compression, it is important to note that the requirements are the same in both. It is therefore necessary in both cases to take in the total suspended weight of the Equipment and the frequency characteristics of the vibration source if known, otherwise the result can be worse than having used nothing at all.

In Engineering, rectifying vibration is not a "Hit or Miss" affair but an exact science requiring considerable knowledge of the causes of the problem and methods needed to effect a cure. Using Nigel B Design's Isolation Mounts makes this task much easier to accomplish.

The solution for an Installer in these cases is to eliminate these unwanted effects by attacking the problem close to the Projector or Camera. The absorbing grommets used in the Nigel B Design's Mounts absorb these vibrations by lowering the frequency levels below the excitation or disturbing influences that occur and in combination with the Isolation Mounting Elements, result in a cure.

Many different methods that have been tried in the past, using Rubber Pads, Springs or a combination of both. These "Band Aid" solutions which are usually ugly, or difficult to fit, don't take into consideration that vibration forces which are measured in Hertz, usually do little or nothing.

Often the problems don't always show up during the initial installation, but become clearly visible during use. That is why the Nigel B Design Isolation Mounts are the perfect option, as they are both easier to add in "Retro Fit" situations, but are just as effective when used in new Installations.

Nigel B Design's Isolation Mounts footprint of only 4" x 4" with a height of 3.3" and a weight of little over 2 lbs, make them hardly visible when installed directly above the Projector Mount. They absorb between 0-30,000 Hertz measured in Durometer's. Durometer measurements are quoted using a Shore rating, an International Standard indicating the "flexibility" of different Compounds. For Example: Chewing Gum has a Durometer of 20 shore, a Rubber Band 25 shore and a typical Vehicle Tire Tread 70 shore.

It is necessary to add the weight of everything below the Anti-Vibration Adaptor including any pipe (3" - 6" is recommended), the weight of the Projector or Camera and its Mount, it is then possible to match their combined weight to chose the correct Isolation Adapter.

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