



Gasket Material to Dampen or Attenuate Vibration

Yes, your next gasket should seal, but it could do more than that. A gasket is an excellent way of reducing the transmission of sound and vibration. That can extend equipment life and improve performance while creating a better environment for those nearby.

Gasket Material Properties for Vibration Dampening

The goal is to have the material acting like a spring: compressing and springing back in response to the excitation force. In other words, they need a combination of resilience and compressibility. Closed cell foams do this particularly well as the gas in each cell compresses and then expands.

Compressibility also depends on the nature of the material used. Softer elastomers like some grades of silicon or the urethane foam used in PORON® compress under relatively light loads. Others, like some nitrile rubbers, need more force to achieve a given level of compression.

For effective vibration dampening, compressibility, resilience and also thickness must be related to the excitation frequency and amplitude. Clamping force also plays a part as compression alters the material's vibration response.

Vibration Dampening Gasket Materials

Silicone rubber and foam, nitrile sponge, and urethane foams can all attenuate vibration effectively. Less well known is that both felt and rubber-bonded cork material can also be used to cut or even eliminate the transmission of sound and vibration. Remember that the addition of a pressure sensitive adhesive (PSA) makes the material much easier to install or apply.

Situations benefiting from vibration dampening

Vibration-attenuating gasket materials are especially useful in HVAC systems where they can reduce noise significantly. Industrial machinery also benefits, with less vibration translating to higher quality output and longer equipment life.

Elastomeric gasket material is found in a growing number of electronics devices. Here it improves life by “ruggedizing” the equipment against knocks or drops. Recently a patent was granted for a vibration-attenuating camera mount that utilizes two gaskets for dampening. ([US 9,654,692](#))

Next Steps

Gasket material selection is a complex field where every application is different. If vibration reduction is of interest ask for advice from a Hennig Gasket specialist today.



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