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Product Information

HIP2 VISCOELASTIC AND ALUMINIUM CONSTRAINING LAYER

Description

These products have a viscoelastic polymer on a half hard aluminium base. They are designed specifically for application to panels and support members for vibration damping and noise reduction purposes. The combination of the polymer and an aluminium backing has proved to be a unique construction with exceptional ability to damp resonant vibrations and noise in the temperature range 0-40° Celsius.

Construction	**Constraining layer**	**Viscoelastic Thickness**
Product	Aluminium	HIP2 Polymer
2002	0.5mm	0.05mm
2005	0.5mm	0.13mm
2010	0.5mm	0.25mm
4002	1.0mm	0.05mm
4005	1.0mm	0.13mm
4010	1.0mm	0.25mm
4020	1.0mm	0.50mm

Liner: Silicone Coated Kraft Paper 0.1mm Thick.

Damping Properties

The Loss Factor and Storage Modulus of a material are 2 parameters that can define its damping performance. These two parameters identify a materials ability to convert vibrational energy. The curve overleaf shows the performance of HIP2 plotted against temperature and frequency in the form of a reduced temperature nomograph, emphasising both the high performance and the temperature dependent qualities of our damping systems.
The performance of most damping devices is highly dependent on the interaction between the device and the system to which it is applied. A constrained layer control system is no different to a typical damping device and its ability to provide the desired performance is affected by parameters other than the temperature and frequency. Namely the geometry, stiffness, mass and resonance mode shape of the structure to which the control system is applied.

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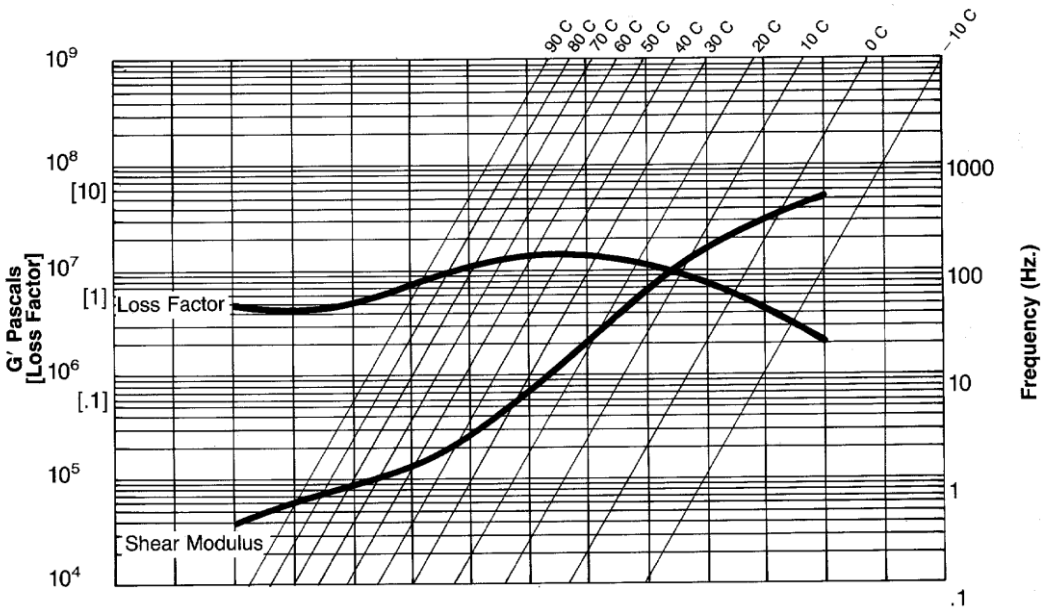
Nomograph of Hip2 Polymer Damping Properties



Characteristics

Excellent aging qualities of the polymer provide long term performance.
Wide temperature range for damping. 0 to 40 Celsius at 100 Hz.
Meet B.S and Afnor performance criteria for flammability, smoke production and toxic emissions in transportation vehicles. (Request separate Test reports for details.)

Potential Applications for user evaluation

For large area general noise and vibration reduction in large relatively thin industrial structures.
For electronic equipment and small appliances.
To reduce unwanted resonant noise and vibration -and thus fatigue-in metal panels and support structures.

Instructions for reading the nomograph

To determine the damping properties at the desired temperature and frequency proceed to read the nomograph as follows:

1. Locate the desired frequency on the right vertical scale.
2. Follow the chosen frequency line to the desired temperature isotherm.
3. From this intersect go vertically down (or up) until crossing both the modulus and loss factor curves.
4. Where you cross these curves read the appropriate modulus and loss factor values from the dual scale on the left vertical side.