

Product Information HT

HIP3 VISCOELASTIC AND STAINLESS STEEL CONSTRAINING LAYER

Description

These products have a higher temperature viscoelastic polymer on a stainless steel 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 a stainless steel constraining layer has proved to be a unique construction with exceptional ability to damp resonant vibrations and noise in the temperature range 40-105° Celsius.

Construction:	Constraining layer	Viscoelastic Thickness
<u>Product</u>	<u>Stainless Steel</u>	<u>HIP3 Polymer</u>
20202P	0.05mm	0.05mm
20205P	0.05mm	0.13mm
20805P	0.20mm	0.13mm
21010P	0.25mm	0.25mm
21020F	0.25mm	0.50mm
21220F	0.30mm	0.50mm
22005P	0.50mm	0.13mm
22010P	0.50mm	0.25mm
22020F	0.50mm	0.50mm
22040F	0.50mm	1.0mm
24010P	1.0mm	0.25mm
24020F	1.0mm	0.5mm
24040F	1.0mm	1.0mm
25040F	1.2mm	1.0mm
26080F	1.5mm	2.0mm

Damping Properties

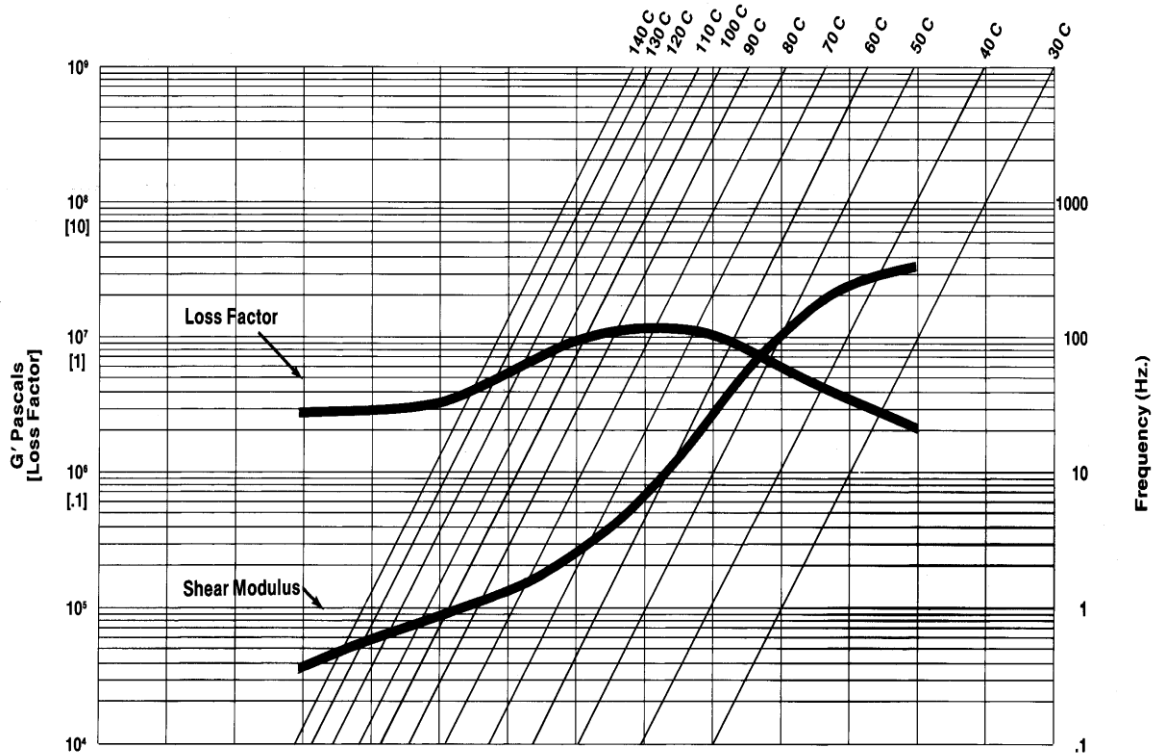
The Loss Factor and Storage Modulus of a material are 2 parameters that can define its damping performance. These two parameters identify a materials ability to convert vibrational energy.

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 especially the geometry, stiffness, mass and resonance mode shape of the structure to which the control system is applied.

Nomograph Of Hip3 Polymer Damping Properties



Characteristics

Excellent aging qualities of the polymer provide long term performance.
 Wide temperature range for damping. 40-105 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.)

Applications

Noise and vibration reduction in structures.
 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.