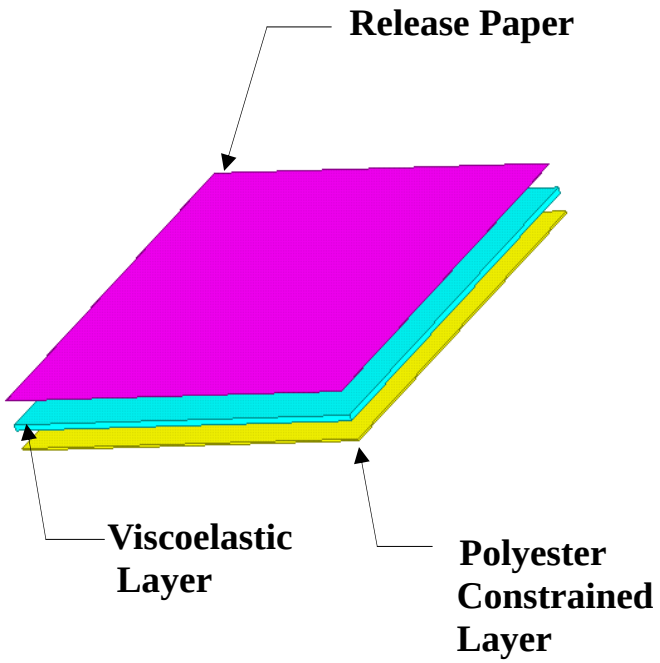
Polymer Technologies Inc.
Engineering Sound Solutions ™
Elastomeric Solutions Division

Technical Data Sheet
Materials Specifications For:

Constrained Layer Damping Material



Applications

The CLDM damping material has three layers: a viscoelastic damping material, a polyester constraining layer, and a protective release paper. The CLDM material is designed to offer the maximum amount of structural damping to circuit boards and panel structures by shearing the highly damped viscoelastic layer.

Material Properties

Temperature range-------- -60F to 200F
Thermal Conductivity----- 1.712 BTU-IN/HR/FT^2/F
Tensile Strength---------- 52 PSI
Adhesive Peel Strength---- 122 OZ/IN after 5 MIN
156 OZ/IN after 24 HR
Breakdown Voltage-------- 45 KVAC
Specific Gravity -------- 1.234 Grams/CM^3
Dielectric Strength----- 490 Volts/MM
Shear Strength---------- 45PSI
Fungus Resistance------ No Growth
Shelf Life----One Year from Date of Manufacture

Attributes

The CLDM material effectively and efficiently reduces the amount of vibration transmitted to a structure resulting in longer fatigue life of the structure or circuit board components. Typically, undamped structures have resonant transmissibility's of 30:1 to 50:1 compared to the input. Damped systems have transmissibility's of 3:1 to 10:1. This significant decrease in transmissibility directly correlates to a reduction in sound power transmission from the structure at resonance. Circuit boards can be ruggedized efficiently and cost effectively without changes to the components of the circuit board.

Installation Data

To install the CLDM material, simply remove the protective release paper and place the damping material on the undamped structure. In circuit board application, the CLDM material must cover at least 60% of the back of the circuit board. Hand pressure is all that is required to adhere the CLDM damper. No additional pressure or curing is needed. The CLDM material is flexible enough to adhere to slightly imperfect surfaces.

Dimensions

The CLDM material is available in sheets of different sizes and shapes as well as different constraining layer materials polyester, stainless steel, aluminum, galvanized steel as well other unique materials. The thickness of the constraining and viscoelastic layers can be varied depending on the application's requirements. The data below is based on a .020 inch thick polyester layer and a .060 inch thick viscoelastic layer. We have found that this configuration provides optimal damping of circuit boards and undamped structures.

Input

A Sine sweep of 2G's at 30 to 500 HZ

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VIBRATION CHARACTERISTICS

RANDOM INPUT	INCREASED STIFFNESS	27%
	DECREASE IN TRANSMISSIBILITY	59%
SINUSOIDAL INPUT	INCREASED STIFFNESS	11%
	DECREASE IN TRANSMISSIBILITY	60%

OUTGASSING CHARACTERISTICS

MATERIAL OUTGASSING	TOTAL MASS LOSS	3.23%
	CVCM	.52%

FLAMMABILITY CHARACTERISTICS

TYPICAL CLDM TRANSMISSIBLITY DATA