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

Installation Data

to slightly imperfect surfaces.

| Temperature range60F 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 LifeOne Year from Date of Manufacture |
| |

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

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.

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

Specifications subject to change without notice. Check with factory for latest revisions. The Federal Trade Commission considers no existing test methods or standards regarding flammability as accurate indictors of the performance of cellular plastic materials under actual fire conditions. Results of existing test methods, such as UL-94, MVSS-302, SAE J-369, and FAR 25.853 are intended only as measurements of the performance of such materials under specific controlled test conditions. Any flammability ratings shown are not intended to reflect hazards presented by these materials under actual fire conditions. The information contained herein is based on laboratory test data developed for PTI and is believed to be reliable, but its accuracy or completeness is not guaranteed. The buyer must test any product to determine the suitability for h is specific application before use. PTI DISCLAIMS ANY RESPONSIBILITY FOR: 1) WARRANTIES OF FITNESS AND PURPOSE, 2) VERBAL RECOMMENDATIONS, 3) CONSEQUENTIAL DAMAGES FROM USE AND 4) VIOLATION OF ANY PATENTS OF TRADEMARKS HELD BY OTHERS.



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| | VIBRATION CHARACTERISTICS | |
|---------------------|------------------------------|-------|
| RANDOM INPUT | INCREASED STIFFNESS | 27% |
| | DECREASE IN TRANSMISSIBILITY | 59% |
| SINUSOIDAL INPUT | INCREASED STIFFNESS | 11% |
| | DECREASE IN TRANSMISSIBILITY | 60% |
| 9 | OUTGASSING CHARACTERISTICS | |
| MATERIAL OUTGASSING | TOTAL MASS LOSS | 3.23% |
| | CVCM | .52% |

TYPICAL CLDM TRANSMISSIBLITY DATA



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