



3M™ Vibration Damping Tape 434

Last Revision Date: May, 2022

Product Description

3M™ Vibration Damping Tapes are low temperature 3M™ Viscoelastic Damping Polymers coated on a dead soft aluminum foil constraining layer. They have pressure sensitive properties and are furnished in roll form and designed for direct, pressure sensitive application to metal and composite panels for vibration damping purposes. The combination of the low temperature 3M viscoelastic polymers and an aluminum constraining layer has proven to be an unique construction with exceptional ability to damp resonant vibrations in the temperature range of -76° to +68°F (-60° to +20°C), with survivability from -76° to +248°F (-60° to +120°C).



Product Features

- Pressure sensitive construction for easy application.
- Excellent aging qualities of the 3M viscoelastic damping polymer type 830 provide long term performance and has excellent resistance to most hydrocarbon and/or aircraft type solvents.
- Wide temperature range for damping. Usable from -76° to 68°F (-60° to 120°C) at 100 Hz plus higher temperatures at higher frequencies.
- These lined products offer the user die-cut capability.

Technical Information Note

The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Typical Physical Properties

Property	Values	Additional Information
Available Formats	g	
Backing	Dead Soft Aluminum Foil	
Liner	Polypropylene	
Liner Color	Blue	View 
Test Name: Primary		
Damping Polymer Thickness	0.05 mm	
Backing Thickness	0.14 mm	
Total Tape Thickness	7.5 mil	View 

Test Method: ASTM D3652

Total Tape Thickness	0.19 mm	View	^
Test Method: ASTM D3652			

Damping Polymer Thickness	2 mil		
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Backing Thickness	5.5 mil		
Weight	0.44 g/m²	View	^

Test Method: ASTM D1000

Weight	0.09 lb/in²	View	^
Test Method: ASTM D1000			

Water Vapor Transmission	0.1 g/100 in²/24 hr	View	^
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Test Method: ASTM D3833

Damping Polymer	Synthetic		

Typical Performance Characteristics

Property	Values	Additional Information	
Tensile Strength	87.6 N/cm	View	^

Test Method: ASTM D3759

180° Peel Adhesion	724 N/cm	View	^
Test Method: ASTM D3330			
Notes: 12 in/min (300 mm/min)			


180° Peel Adhesion	65 oz/in	View	^
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Test Method: ASTM D3330

Notes: 12 in/min (300 mm/min)

Tensile Strength	800 oz/in	View	^
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Test Method: ASTM D3759

Elongation at Break	12 %	View 
Test Method: ASTM D3759		
Long Term Temperature Resistance	120 °C	
Minimum Long Term Temperature Resistance	-60 °C	
Long Term Temperature Resistance	248 °F	
Minimum Long Term Temperature Resistance	-76 °F	
Flammability Test	Pass FAR 25.853(a)	

Typical Damping Properties

Note Regarding Dynamic Mechanical Properties:

The shear storage modulus (G') and loss factor of a viscoelastic adhesive are two parameters used to partially define the damping performance when used in the form of a constrained layer damping treatment. The above curves illustrate these data as a function of frequency and temperature in the form of a reduced temperature nomograph. While the damping performance of a constrained layer damping treatment depends largely on the dynamic mechanical properties of the viscoelastic adhesive alone, it is also dependent on other parameters. Namely the geometry, stiffness, mass and mode shape of the combination of the damper and the structure to which it is applied will also affect the damping performance.

To determine the dynamic mechanical properties at the desired temperature and frequency proceed as follows:

1. Locate the desired frequency on the right vertical scale.
2. Follow the chosen frequency horizontally to the desired temperature isotherm.
3. From the intersect, move vertically up and/or down until crossing both the modulus and loss factor curves.
4. Read the shear storage modulus and loss factor values from the left vertical scale.

Storage and Shelf Life

Store under normal conditions of 60° to 80°F (16° to 27°C) and 40 to 60% R.H. in the original carton. To obtain best performance, use this product within 24 months from date of manufacture.

Bottom Matter

3M
Industrial Business
Industrial Adhesives and Tapes Division
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St. Paul, MN 55144-1000

For Additional Information

To request additional product information or to arrange for sales assistance, call toll free 1-800-362-3550 or visit www.3M.com/industrialtape. Address correspondence to: 3M Industrial Adhesives and Tapes Division, Building 225-3S-06, St. Paul, MN 55144-1000. Our fax number is 877-369-2923. In Canada, phone: 1-800-364-3577. In Puerto Rico, phone: 1-787-750-3000. In Mexico, phone: 52-70-04-00.

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Handling/Application Information

Application Examples

- For lower temperature aerospace and industrial applications.
- Reduce unwanted resonant noise, vibration and fatigue in metal panels and support structures.
- Chutes, conveyors, bins, metal shop boxes and tables where metal contact with materials can result in unwanted vibration.

References

Property	Values
3m.com Product Page	https://www.3m.com/3M/en_US/p/d/b40067921/
Safety Data Sheet SDS	https://www.3m.com/3M/en_US/company-us/SDS-search/results/?gsaAction=msdsSRA&msdsLocale=en_US&co=ptn&q=434

ISO Statement

This Industrial Adhesives and Tapes Division product was manufactured under a 3M quality system registered to ISO 9001 standards.

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