



# Technical Data Sheet

## 3M™ Vibration Damping Tape 434

### 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 a 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

Attribute Name	Test Method	Value
Weight	ASTM D1000	0.44 g/m <sup>2</sup>
Damping Polymer		Synthetic
Damping Polymer Thickness		0.05 mm
Backing		Dead Soft Aluminum Foil
Backing Thickness		0.14 mm
Total Tape Thickness	ASTM D3652	0.19 mm
Liner		Polypropylene
Primary Liner Color		Blue
Water Vapor Transmission	ASTM D3833	0.1 g/100 in <sup>2</sup> /24 h

### Typical Performance Characteristics

Attribute Name	Test Method	Temperature	Value
180° Peel Adhesion	ASTM D3330	22 °C	724 N/cm <sup>1</sup>
Elongation at Break	ASTM D3759		12 %
Tensile Strength	ASTM D3759		87.6 N/cm
Long Term Temperature Resistance			120 °C <sup>2</sup>
Minimum Long Term Temperature Resistance			-60 °C <sup>2</sup>
Flammability Test			Pass FAR 25.853(a)

<sup>1</sup> 12 in/min (300 mm/min)

<sup>2</sup> Long Term (day, weeks)

## Typical Damping Properties

### Note Regarding Dynamic Mechanical Properties:

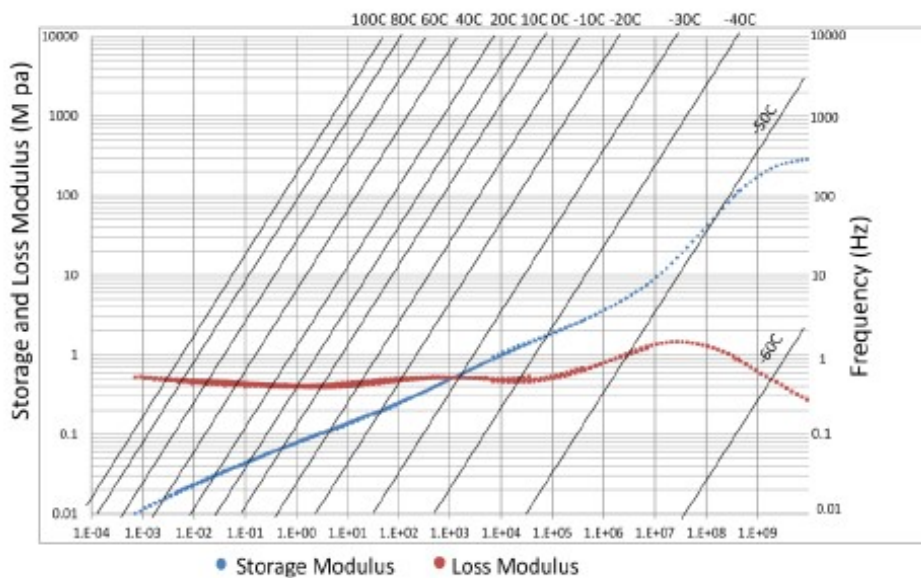
The shear storage modulus ( $G'$ ) and loss factor of a viscoelastic adhesive are two parameters used to partially define the damping performance when used in the form of a constrained layer damping treatment. The above curves illustrate these data as a function of frequency and temperature in the form 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.

**Dynamic Mechanical Properties of 3M™ Viscoelastic Damping Polymer Type 830  
(Without Foil)**



## 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.

### Storage and Shelf Life

Store under normal conditions of 16° to 27°C (60° to 80°F) and 40 to 60% relative humidity in the original packaging, out of direct sunlight. For best performance, use this product within 24 months from date of manufacture.

### Product Family

This product is a part of the the Vibration Damping Tape Family which includes: 3M™ Vibration Damping Tape 434, 3M™ Vibration Damping Tape 435, 3M™ Vibration Damping Tape 436

### Automotive Disclaimer

#### Select Automotive Applications:

This product is an industrial product and has not been designed or tested for use in certain automotive applications, such as automotive electric powertrain

battery or high voltage applications, which may require the product to be manufactured in a IATF certified facility, meet a Ppk of 1.33 for all properties, undergo an automotive production part approval process (PPAP), or fully adhere to automotive design or quality system requirements (e.g., IATF 16949 or VDA 6.3). Customer assumes all responsibility and risk if customer chooses to use this product in these applications.

## **Information**

Precautionary Information: Refer to product label and Material Safety Data Sheet for health and safety information before using the product. For information, please contact your local 3M Office. You can click or scan QR code to see contact detail or visit [www.3M.com](http://www.3M.com) Important Information: All statements, technical information and recommendations contained in this document are based upon tests or experience that 3M believes are reliable. However, many factors beyond 3M's control can affect the use and performance of a 3M product in a particular application, including the conditions under which the product is used and the time and environmental conditions in which the product is expected to perform. Since these factors are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for the user's method or application. All questions of liability relating to this product are governed by the terms of the sale subject, where applicable, to the prevailing law. Values presented have been determined by standard test methods and are average values not to be used for specification purposes. Our recommendations on the use of our products are based on tests believed to be reliable but we would ask that you conduct your own tests to determine their suitability for your applications. This is because 3M cannot accept any responsibility or liability direct or consequential for loss or damage caused as a result of our recommendations.

## **ISO Statement**

This product was manufactured under a 3M quality system registered to ISO 9001 standards.

## **For Additional Information**

To request additional product information or to arrange for sales assistance, please contact your local 3M office.

3M™ Centre  
Cain Rd, Binfield, Bracknell RG12 8HT, United Kingdom  
[3m.co.uk/iatd](http://3m.co.uk/iatd)

©3M 2024 (9/24)