



# 2552 Damping Foil

---

## Product Data Sheet

---

Updated : September 1998  
Supersedes : August 1997

---

### Product Description

This product consists of a room temperature pressure sensitive viscoelastic polymer on dead soft aluminium foil.

It can be used for application to vibrating panels and support members. This combination of viscoelastic polymer and an aluminium

foil backing (a constrained layer damper) is a unique construction with exceptional ability to control resonant vibrations in the temperature range of 40°F to 120°F (5°C to 50°C).

---

### Physical Properties

Not for specification purposes

<b>Viscoelastic</b>	Room temperature acrylic viscoelastic polymer with PSA qualities.	
<b>Liner</b>	Easy release Paper Liner	
<b>Thickness</b> (ASTM D-3652)	Aluminium 10 mils (0.254 mm)	Viscoelastic 5 mils (0.127 mm)
<b>Weight</b>	.17 lbs per square foot	
<b>Shelf Life</b>	12 months from date of despatch by 3M when stored in the original carton at 21°C (70°F) & 50 % Relative Humidity	

---

### Performance

#### Characteristics

Not for specification purposes

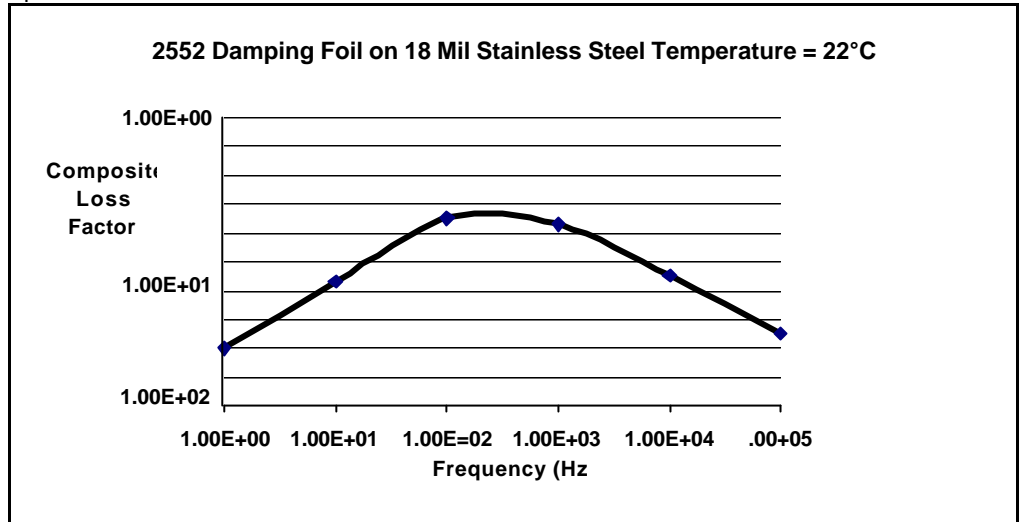
The high-energy dissipative polymer used in the 2552 Damping Foil can afford excellent control of resonance-induced vibrations. When applied to a vibrating structure, the polymer used in 2552 Damping Foil converts vibration to negligible heat. Vibration amplitudes and structure-borne noise can be consequently reduced.

The performance of most damping devices is highly dependent on the interaction between the device and the system to which it is applied. That is to say, the ability of a constrained layer damping foil to provide the desired performance is affected by parameters in addition to temperature and frequency. Namely, the geometry, stiffness and the

structure to which the control system is applied will affect the performance. For more information about a constrained layer configuration, please contact a representative of 3M Specialty Tapes & Adhesives on 0161 237 6363.

Date : September 1998  
2552 Damping Foil

The loss factor of a material is a dynamic property that can define damping performance.



**Test Method:** The data were obtained by doing a frequency sweep from 1 to 100 radians/sec (0.16 to 16 Hz) at 5 different temperatures, -20, -10, 0, 10 and 22°C. A 3 point bend geometry was used on the Rheometrics RSA II.

Time - temperature superposition was used to create the master curve for a reference temperature of 22°C.

**Note:** Please note that these data have been determined by combining 2552 Damping Foil with a panel of 0.018 in. Thick stainless steel. These data are presented as an illustration of the damping that can be achieved from this product when it is combined with a material of this description and tested at this temperature.

**Solvent and Fuel Resistance**

When properly laminated between two impervious materials, the polymer will resist intermittent exposure to mild acids and alkalies,

most oils, grease, gasoline, kerosene, JP-4 Fuel, hydraulic fluids, and other typical aromatic and aliphatic hydrocarbon and ketone solvents.

**Note :**

Continuous submersion in chemical solutions is not recommended.

**Characteristics**

Excellent ageing qualities of the polymer.

Wide temperature range for damping. Usable from 40°F to 120°F (5°C to 50°C).

Liner on product offers the user die-cut capability.

PSA for ease of application.

**Application Ideas**

Industrial Applications.  
  
Electronic Equipment and Appliances.

Reduce resonant noise, vibration, and fatigue in metal and plastic panels and support structures.

Almost anywhere plastic or metal contact with materials can result in potentially damaging vibration.

Date : September 1998  
2552 Damping Foil

---

**Application Support****Testing available :**

**Damping analysis (FEA &  
Modal/Damping Testing)**

3M is a trademark of the 3M Company.

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.

**Tapes & Adhesives**

© 3M United Kingdom PLC 1996

3M United Kingdom PLC  
3M House,  
28 Great Jackson Street,  
Manchester,  
M15 4PA

Product Information :  
Tel 0870 60 800 50  
Fax 0870 60 700 99

3M Ireland  
3M House, Adelphi Centre,  
Upper Georges Street,  
Dun Laoghaire, Co. Dublin,  
Ireland

Customer Service :  
Tel (01) 280 3555  
Fax (01) 280 3509