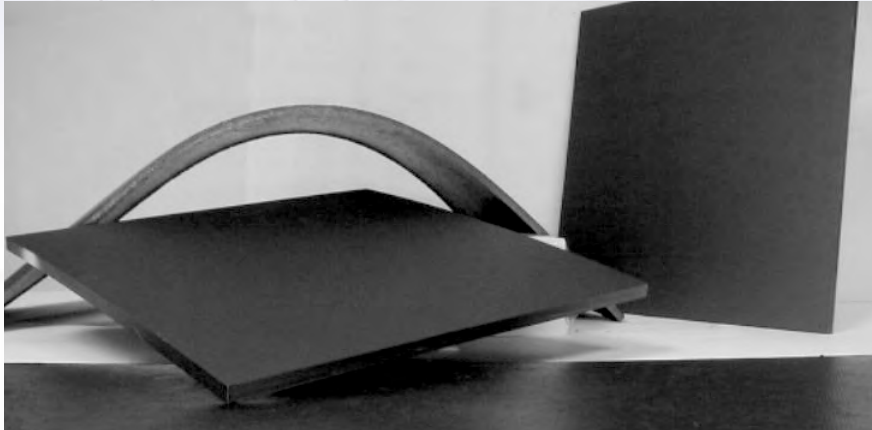
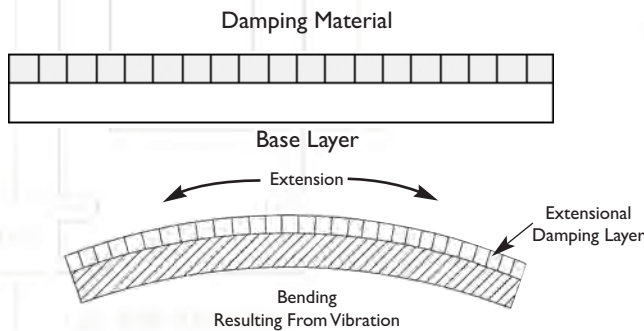


Technical Specifications

Vibration Damping



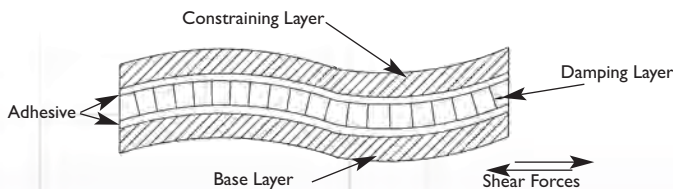
SOUNDOWN Vibration Damping materials are an easily applied damping layer for the stopping of reverberant “ringing” vibrations in plate construction as thick as 5/8”. Structural damping material consumes vibration energy and transforms it into low level heat. This dissipates the vibration energy in the structure before it can build up and radiate as sound. Tiles and sheets are commonly installed on a range of substrates such as: steel, aluminum, and fiberglass laminates. Vibration damping loss factor (n), at 1,000 Hz for the 3/8” tile, exceeds 0.10 on aluminum plate up to 0.40”. Even greater damping values are obtained when the material is installed as a “constrained layer” treatment as shown on the bottom diagram to the left.



Typical applications for Soundown Vibration Damping materials are panels or structural members that are driven by mechanical sources or the movement of material, fluid or gas. These applications include:

- Enclosures (doors & panels)
- Equipment cabinets
- Machine guards
- Appliances
- Ducts and pipes
- Hoods
- Chutes
- Hoppers and bins
- Conveyors

Above: a free-layer damping application. This is the most common and most easily installed form of damping. The vibration energy is dissipated through the extension and compression of the damping material due to the vibratory stress of the base layer.



Damping tiles and sheets are a polymeric product resistant to fuel, water, and fire. The product is optimized for use in the temperature range of 55° to 90° F. All products are self extinguishing and pass ASTM D-635 flame testing.

Above: a constrained-layer damping application. During vibrational distortion the system flexes creating shear forces on the constraining layer. It is these shear forces that causes the energy to dissipate and turn into heat.

These damping materials are bonded to the treated structure using 100% solid epoxy systems such as the TA-30 resin supplied by Soundown Corp. Our 1/16”, 1/8” and 1/4” damping material can also be supplied with a pressure sensitive adhesive (PSA) applied, for use on thinner substrates.

Extensional Damping Material

The Material

The standard material comes in 12" x 12" tiles for the 3/8" and 5/8" thick or 4.5' wide rolled sheet goods for the thickness of 1/16", 1/8" and 1/4"

Thickness

1/6" (1 mm)
1/8" (3 mm)
1/4" (6 mm)
3/8" (9 mm)
5/8" (15 mm)

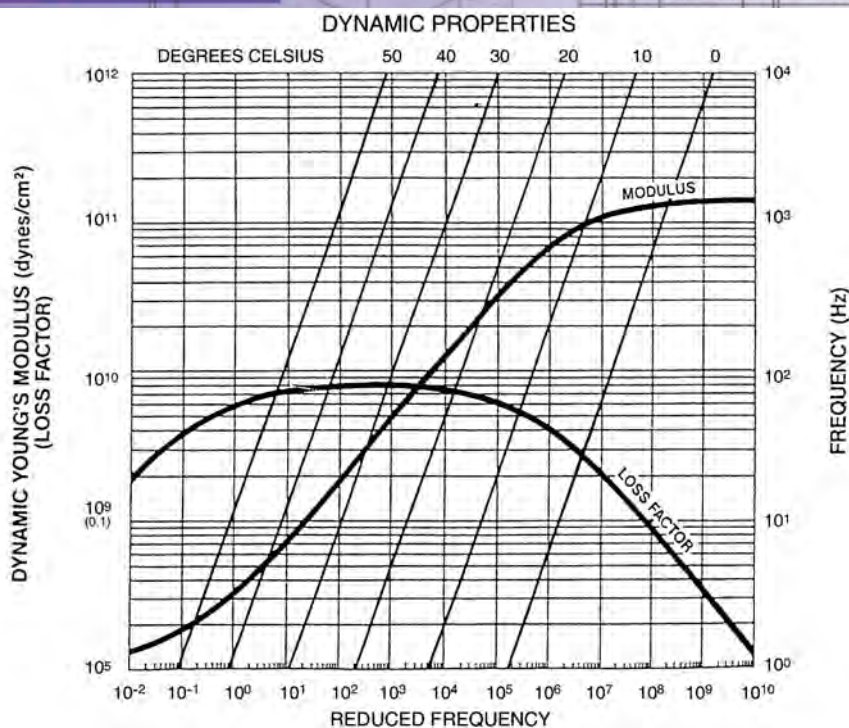
Surface Density

0.4 lbs ft² (2.2kg/m²)
0.9 lbs ft² (4.4kg/m²)
1.9 lbs ft² (9.3kg/m²)
2.7 lbs ft² (13.2kg/m²)
3.6 lbs ft² (17.6kg/m²)

Typical Physical Properties

Density Nominal lb / ft ³ (Kg / m ³)	1490 (93)	Tensile Strength psi (Kpa) ASTA D638	1987 (13700)	System Loss Factor At 1000 Hz on 62 mil Aluminum Thickness in (cm) ASTA E756 93	
Flammability UL94	Meets V-O	Elongation (%) ASTA D638	23		
MVSS-302	Meets	Tear Strength lbf/in (kN/m) ASTA D1004-93 ASTA D3574	375 (66)	@ 32°F (0°C)	η=.140
Temperature Range °F (°C) Peak Performance	35°F to 115°F (2°C to 46°C)	Recommend Max Intermittent	225°F (107°C)	@ 50°F (10°C)	η=.270
				@ 68°F (20°C)	η=.210
				@ 86°F (30°C)	η=.120

Acoustic Performance



16 Broadway
Salem, MA 01970
1-978-745-7000
www.SOUNDOWN.com



3005 S.W. 2nd Ave. #102
Fort Lauderdale, FL 33315
1-954-761-9188
sales@soundown.com