SNAPSHOOT
ENGINEERED FOR A SAFER TOMORROW

현장을 이해하고, 필요한 솔루션을 연결합니다.

산업안전 · 추락방지 시스템
산업용 소재 · 건축자재
제품 제안부터 공급·시공·설치·교육까지



COMPANY INFORMATION

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TECHNICAL DOCUMENTS

인증서 · 데이터시트 · 기술자료

제품의 규격과 성능, 인증 및 적용 조건을 확인하기 위한 자료입니다.

ABOUT SNAPSHOOT

제품 공급을 넘어, 현장에 맞는 해결책으로

스냅슛은 산업현장의 작업 환경과 요구 조건을 바탕으로
적합한 제품과 시스템을 제안합니다. 현장 실사를 통해 설치 조건을 확인하고,
공급부터 시공·설치 및 사용 교육까지 필요한 과정을 함께합니다.

추락방지 시스템

안전대부착설비 · 수평·수직 라이프라인
레일 시스템 · 리지드 포스트

밀폐공간 진입·구조 솔루션

데빗암 · 삼각대 · 구조용 윈치
윈치 안전블록 · 구조장비

산업안전 보호구

전신형 안전대 · 랜야드 · 안전블록
작업 환경에 맞춘 개인보호구

산업용 소재·건축자재

산업용 테이프 · 접착제 · 기능성 소재
구조용 스크류 · 목조건축 자재

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홈페이지 바로가기 →
문서 라이브러리 바로가기 →
시공사례 바로가기 →
문의하기 →

본 페이지는 스냅슛의 자료 제공 안내용 표지입니다. 첨부된 인증서 및 기술자료의 발행 주체, 인증 대상과 적용 범위는 해당 원문을 기준으로 확인해 주세요.



English-US

Last Revision Date: June, 2024

Supersedes: May, 2022

Technical Data Sheet

3M™ Damping Aluminum Foam Sheet 4014

Product Details

Regulatory Info/SDS

Product Description

3M™ Damping Aluminum Foam Sheet 4014 is an open-cell polyurethane foam with an aluminum constraining layer on one side and a pressure sensitive adhesive on the opposite side to facilitate attachment to the surface of the vibrating panel. The adhesive is protected by an easy-release liner.

How it works:

Strain energy from the vibrating panel is introduced into the viscoelastic foam. The strain in the foam is in shear as a result of the aluminum constraining layer. The viscous portion of the response of viscoelastic foam results in mechanical energy being dissipated to negligible heat. This energy dissipation results in (1) attenuated amplitudes of vibration when systems are being continuously excited at frequencies which match their natural frequencies, or (2) more rapid decay in systems that are freely oscillating at their natural frequencies as a result of a momentary excitation such as an impact.

Product Features

- Excellent damping per pound of material used and installed cost ratio.
- Easy to apply – only hand pressure required.
- Good thermal insulator and heat reflector.
- Excellent moisture resistance, aging properties and fatigue resistance.
- Meets Federal Air Regulation Flammability Specifications for acoustical insulation materials (FAR Section 25.853, Paragraph B).

Technical Information Note

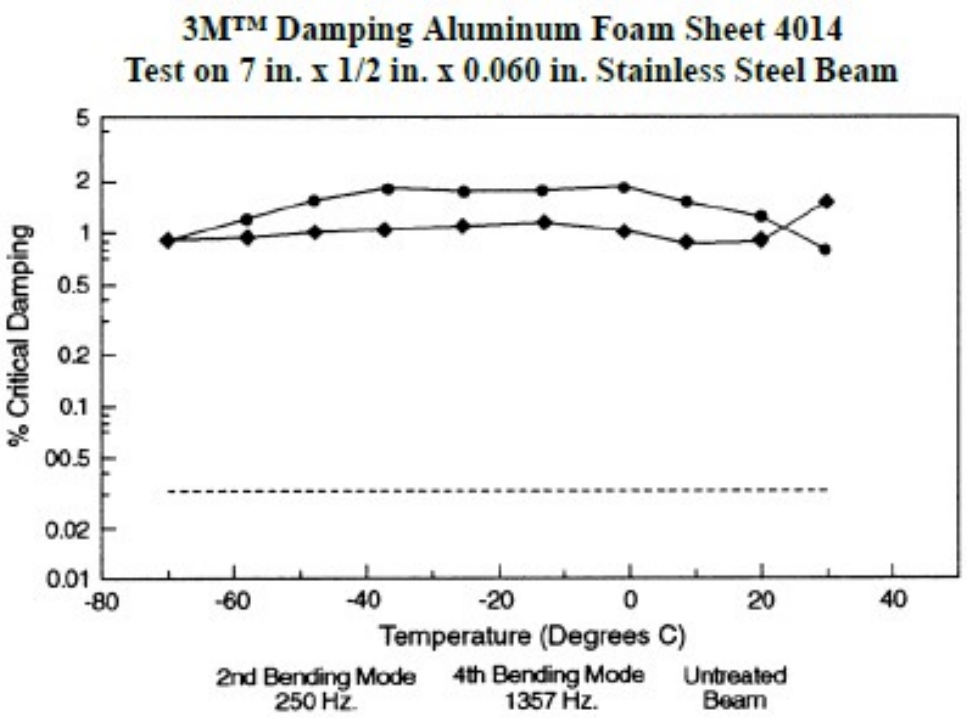
The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Typical Physical Properties

Attribute Name	Test Method	Value
Weight		1.32 kg/m² (0.27 lb/ft²)
Total Thickness	ASTM D3652	6.35 mm (250 mil)
Moisture Resistance		Less than 0.25% weight gain (When conditioned at 150°F/67°C and 100% RH for one week).

Typical Damping Properties

The figure below illustrates the damping measured on 2 of the bending modes of a stainless steel cantilever beam when 3M damping aluminum foam sheet 4014 is attached to the surface of the beam. The damping is measured as a function of temperature and is compared to an untreated beam. This damping was determined by the half power band width technique on frequency response functions measured with a Fast Fourier Transform Analyzer.



Electrical and Thermal Properties

Attribute Name	Value
Thermal Conductivity	0.069 W/m/°C (0.48 (btu-in)/(h-ft²-°F))

Handling/Application Information

Application Examples

• Reduce resonant noise, vibration and fatigue in metal, plastic panels and support structures.
• Almost anywhere plastic or metal contact with materials that can result in potentially damaging vibration.

Application Techniques

3M™ Damping Aluminum Foam Sheet 4014 contains an aggressive pressure sensitive adhesive to facilitate bonding to the surface of the structure. Best results are obtained when applied at temperatures above 50°F (10°C) on a clean, dry surface (free of oil, wax, dust, rust, etc.) and the bond is continuous (void-free) throughout the interface between 3M damping aluminum foam sheet 4014 and the structure.
For best results apply as follows:
1. Clean metal surface of structure with appropriate solvent for removing any surface contaminants such as processing oils or waxes.

Note: When using solvents, be sure to extinguish ignitions sources and follow the manufacturer’s precautions and directions for use when handling such materials.
2. Wipe the clean surface of the structure to complete dryness with a clean, dry lint free cloth.

Note: Steps 1 and 2 should be repeated until the used drying cloth is clean (no more residue appears on the cloth after wiping).
3. Remove the protection liner.

4. Place one edge on the surface of the structure and press into place with finger pressure. Lower the rest of the foam piece into place while applying finger pressure on the bond line as it progresses across the surface of the structure. This method of application will minimize voids in the pressure sensitive bond.

Certifications/Standards

Federal Aviation Regulations, FAR 25.853

3M™ Damping Aluminum Foam Sheet 4014 FAR (Federal Air Regulation) Section 25.853 Compartment Interiors
We have classified our 3M damping aluminum foam sheet 4014 construction within paragraph (B) of the subject FAR Section as it is included in the class of acoustical insulation materials. As such, it must be self extinguishing when tested vertically in accordance with the applicable portions of Appendix F (Acceptable Test Procedure for showing compliance 25.853).
Specimen samples of 3M damping aluminum foam sheet 4014 were prepared in accordance with paragraph (B) of Appendix F. “Materials must be tested either as a section cut from a fabricated part as installed in the airplane or as a specimen simulating a cut section.” Samples of 3M damping aluminum foam sheet 4014 (3 in x 12 in) were applied to 20-mil aluminum panels of the same size to meet this requirement. The apparatus used to conduct this testing was as specified in Paragraph (C) of Appendix F.

Industry Specifications

FAR (Federal Air Regulation) Section 25.853, Paragraph B

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.

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

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ISO Statement

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

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