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3M™ Single-Coated Vinyl Foam Tape 4516

Product Description

3M™ Single-Coated Foam Tapes will adhere to a variety of substrates, including latex-painted wood, lacquered wood, enameled steel, glass, aluminum, stainless steel, acrylic, ABS, and PVC (non-plasticized) as tape adhesion is typically satisfactory within 20 minutes and continues to build with additional time.

Product Features

3M™ Vinyl Foam Tapes Series 4500 are a flexible, black, high-density, closed-cell foam with pressure-sensitive acrylic adhesive on one side. A 0.003 inch (0.08 mm) thick white, silicone treated paper liner is applied to the non-adhesive side of the foam so that the PVC can be cut to length and applied while leaving the liner in place.

3M vinyl foam tape series 4500 and 4700 are durable, flexible closed cell vinyls which can help seal out dust, light and moisture when placed under 30% compression. These vinyl tapes offer excellent aging characteristics and will remain flexible when exposed to elevated temperatures and UV light. Application ideas include: dust and moisture seal for appliances, computers, copiers and other electronic and transportation equipment.



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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 | | Method | Notes |
|---|-------------------------|-----------|------------|--------------------|
| Color | Black | | | |
| Thickness | 1.6 mm | 62 mil | | |
| Thickness Tolerance | 20 % | | | |
| Adhesive | 430* | | | |
| Density | 400 kg/m³ | 25 lb/ft³ | ASTM D3574 | Foam with adhesive |
| Liner Thickness | 0.08 mm | 3 mil | | |
| Liner Color | White | | | |
| Shore 00 Hardness | 55 | | ASTM D2240 | Foam with adhesive |
| Compression Deflection: 25% Compression | 27.6 kPa | 4 lb/in² | ASTM D3574 | |
| Mold Resistance: Foam with adhesive | No growth after 28 days | | ASTM G21 | |

*Note

*3M™ Adhesive 430 is a medium soft adhesive system that offers good quick stick to many types of surfaces along with excellent aging and UV resistance.

Typical Performance Characteristics

| Property | Values | | Method | Notes |
|----------------------------|---------------------|-------------------|------------|--|
| Tensile Strength | 895 kPa | 130 lb/in² | ASTM D3574 | Die “A” |
| Elongation | 200 % | | ASTM D3574 | Die “A” |
| Low Temperature Resistance | Cold flex at -18 °C | Cold flex at 0 °F | | No cracks. Tape slowly bent around a 1/4 in. diameter mandrel. |
| Compression Set | 15 % | | ASTM D1667 | |

Typical Performance Characteristics (continued)

| High Temperature Resistance | | Test Condition |
|-----------------------------|--------|-------------------------|
| 66 °C | 150 °F | Continuous |
| 121 °C | 250 °F | 30 minutes maximum time |

Property: High Temperature Resistance

Available Sizes

| Property | Values | |
|---------------------------|----------|-----------|
| Standard Length | 32.9 m | 36 yd |
| Roll Diameter | 280 mm | 11 in |
| Maximum Length | 91.4 m | 100 yd |
| Minimum Available Width | 3 mm | 0.125 in |
| Maximum Available Width | 1118 mm | 44 in |
| Normal Slitting Tolerance | ± 0.8 mm | ± 1/32 in |

Electrical and Thermal Properties

| Property | Values | | Method |
|--|---------------|-----------------------|------------|
| Dielectric Strength | 140 V/mil | | ASTM D149 |
| Thermal Conductivity | 0.043 W/m/K | 3 (btu-in)/(h-ft²-°F) | ASTM C518 |
| Surface Resistivity: Non-Adhesive Side | 1 × 10^10 Ω | | ASTM D257 |
| Surface Resistivity: Adhesive Side | 2 × 10^11 Ω | | ASTM D257 |
| Water Absorption: 30% Compression | 5 % by Volume | | ASTM D1056 |

Typical Environmental Performance

Solvent and Fuel Resistance

| 3M vinyl foam tape series 4500 | | |
|-----------------------------------|-----------|-----------|
| Solvent/Fuel | Adhesive | Foam |
| Acetone | Softens | Swells |
| Ammonia Cleaner | No effect | No effect |
| Engine Oil | No effect | No effect |
| Gasoline | No effect | No effect |
| JP-4 (jet fuel) | No effect | No effect |
| MEK | Softens | Swells |
| Mineral Spirits | No effect | No effect |
| Soapy Water | No effect | No effect |

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Typical Environmental Performance (continued)

*Visual observations of tape bonded to steel panels and immersed totally in solvent/fuel for 24 hours.

Handling/Application Information

Application Techniques

- Bond strength is dependent upon the amount of adhesive-to-surface contact. Firm application pressure develops better adhesive contact and helps improve bond strength.
- To obtain optimum adhesion, the bonding surface must be clean, dry, and well unified. Some typical surface cleaning solvents are isopropyl alcohol and heptane.*
- *Be sure to follow the solvent manufacturer's precautions and directions for use when handling solvents.
- Ideal tape application temperature range is 70°F to 100°F (21°C to 38°C). Initial tape application to surfaces at temperatures below 50°F (10°C) is not recommended because the adhesive becomes too firm to adhere readily. However, once properly applied, low temperature holding is generally satisfactory.

Storage and Shelf Life

Store in the original cartons at 60-80°F (15-27°C) and 50% relative humidity.

Shelf life is 24 months from date of manufacture.

Industry Specifications

UL 94HBF (File #E76581)

FMVSS 302

FAR 25.853 B-2

FAR 25.853 B-3

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Information

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References

Safety Data Sheet (SDS)

https://www.3m.com/3M/en_US/company-us/SDS-search/results/?gsaAction=msdsSRA&msdsLocale=en_US&co=ptn&q=4516

Family Group

| | 4504 | 4508 | 4516 |
|----------------------|-------|-------|-------|
| Color | Black | Black | Black |
| Thickness (mm) | 6.4 | 3.2 | 1.6 |
| Adhesive | 430* | 430* | 430* |
| Liner Thickness (mm) | 0.08 | 0.08 | 0.08 |
| Liner Color | White | White | White |

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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