



Technical Data Sheet

3M™ VHB™ Window Tape B45F



[Product Details](#)



[Regulatory Info/SDS](#)

Product Description

Finite Element Analysis (FEA) data is available for this product at: 3m.com/FEA

3M™ VHB™ Window Tape is a conformable double-coated pressure sensitive acrylic foam tape with a chemistry that has outstanding durability, UV resistance and temperature performance. Unlike other foam types, the high strength acrylic foam is viscoelastic in nature which gives energy absorbing and stress relaxing properties that provides this tape with its unique characteristics.

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
Adhesive Type		Multi-Purpose Acrylic
Adhesive Carrier		Conformable Acrylic Closed Cell Foam
Total Tape Thickness	ASTM D3652	1.1 mm (45 mil)
Density	ASTM D3574	720 kg/m ³ (45 lb/ft ³) ¹
Color		Black
Liner		Polyethylene Film
Liner Thickness		0.125 mm (0.005 mil)
Primary Liner Color		Red
Thickness Tolerance		±10 %

¹ Foam with adhesive

Typical Performance Characteristics

Attribute Name	Test Method	Temperature	Substrate	Value
90° Peel Adhesion		22 °C (72 °F)	Glass	35 N/cm (320 oz/in)
Overlap Shear Strength			Stainless Steel	483 kPa (70 lb/in ²)
Normal Tensile	ASTM D897	22 °C (72 °F)	Aluminum T-block	586 kPa (85 lb/in ²)

Static Shear

Substrate: Stainless Steel

Temperature	Value
22 °C (72 °F)	1,000 g/0.5 in ² ¹
70 °C (158 °F)	500 g/0.5 in ² ¹
93 °C (200 °F)	500 g/0.5 in ² ¹

¹ Holds 10,000 min.

Attribute Name	Value
Minimum Application Temperature	15 °C (60 °F)
Short Term Temperature Resistance	149 °C (300 °F) ¹
Long Term Temperature Resistance	93 °C (200 °F) ²

¹ No change in room temperature dynamic shear properties following 4 hour conditioning at indicated temperature with 100 g/static load. (Represents minutes, hour in a process type temperature exposure).

² Maximum temperature where tape supports at least 250 g load per 0.5 in² in static shear for 10,000 minutes. (Represents continuous exposure for day or weeks).

Typical Performance Characteristics

Attribute Name	Value
Solvent Resistance	Excellent

Attribute Name	Value
UV Resistance	Excellent

Handling/Application Information

Application Examples

Excellent adhesion to a broad range of high and medium surface energy substrates common in the window & door industry including glass, metal, vinyl, composite materials and many paint formulations.

Application Techniques

For maximum bond strength, all non-glass surfaces should be thoroughly cleaned with a 50:50 mixture of isopropyl alcohol* and water to remove contaminants. Glass surfaces should be cleaned with a 70/29.5/0.5% mixture of IPA/water/silane solution prior to tape application.*

Pre-mixed solutions are commercially available for a simple cleaning and glass preparation method. Glass is hydrophilic or “water-loving” in nature, meaning water can undercut a tape, adhesive or sealant bond over time. A silane coupling agent in the cleaning solution reacts with the glass to create a hydrophobic or “water-hating” bonding surface. Further surface preparation and application bonding information is available in the following 3M Technical Bulletins:

“3M™ VHB™ Tape Glass Bonding and Silane Coupling Agents” 70-0702-9983-2

“Surface Preparation for 3M™ VHB™ Tape Applications” 70-0704-8701-5

- Ideal tape application is accomplished when temperature is between 70° and 100°F (21° and 38°C) and the bond is allowed to dwell 72 hours. Initial tape application to surfaces at temperatures below 60°F (16°C) is not recommended.
- Bond strength is dependent upon the amount of adhesive-to-surface contact developed. Firm application pressure develops better adhesive contact and helps improve bond strength. Generally, this means that the tape should experience at least 15 psi (100 kPa) in roll down or platen pressure.
- After application, the bond strength will increase as the adhesive flows onto the surface. At room temperature, approximately 50% of the ultimate strength will be achieved after 20 minutes, 90% after 24 hours and 100% after 72 hours.

*Consult manufacturer’s directions for use and precautions when using cleaning solvents. This cleaning recommendation may not be compliant with the rules of certain Air Quality Management Districts in California; consult applicable rules before use.

Storage and Shelf Life

Store in original cartons at 70°F (21°C) and 50% relative humidity.

When stored under proper conditions, product retains its performance and properties for 24 months from date of manufacture.

Available Sizes

Attribute Name	Width	Value
Core Size (ID)		76.2 mm (3 in)
Maximum Length	1/4 in to 3/8 in widths	65.8 m (72 yd)
Maximum Length	3/8 in to 1/2 in width	98.8 m (108 yd)
Maximum Length	1/2 in(12.7mm) and wider	131.6 m (144 yd)
Minimum Available Width		6.4 mm (1/4 in)

Attribute Name	Width	Value
Note		Subject to Minimum Order Requirements
Precision Slitting Tolerance		0.4 mm ($\pm 1/64$ in) ¹
Standard Roll Length		32.9 m (36 yd)

¹ Precision slitting is available on select products with minimum order of full web increments.

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 Industrial Adhesives and Tapes Division product was manufactured under a 3M quality system registered to ISO 9001 standards.

3M
Industrial Adhesives and Tapes Division
3M Center, Building 225-35-06
St. Paul, MN 55144-1000
800-362-3550

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