



VHB™ Window Tape

G45P • G45F • B45P • B45F

Technical Data

February, 2006

Product Description

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.

Construction

Adhesive:	Multi-Purpose Acrylic
Adhesive Carrier:	Conformable Acrylic Closed Cell Foam
Thickness:	0.045 in. (1.1 mm)
Tolerance:	± 10%
Density:	45 lb./ft. ³ (720 kg/m ³)
Tape Color:	3M™ VHB™ Window Tapes G45P & G45F - Gray 3M™ VHB™ Window Tapes B45P & B45F - Black
Liner:	
Paper (P)	White (printed) 0.003 in. (0.8 mm)
Film (F)	Red polyethylene 0.005 in. (0.125 mm)

Typical Physical Properties and Performance Characteristics

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

Peel Adhesion: (glass)	20 lb./in. width (350 N/100 mm)
Normal Tensile: (alum T-block)	85 lb./in. ² (586 kPa)
Dynamic Shear: (stainless steel)	70 lb./in. ² (483 kPa)
Static Shear: (stainless steel)	
72°F (22°C)	1000 g/0.5 sq. in. (holds 10,000 min.)
158°F (70°C)	500 g/0.5 sq. in. (holds 10,000 min.)
200°F (93°C)	500 g/0.5 sq. in. (holds 10,000 min.)
Solvent Resistance:	Excellent
U.V. Resistance:	Excellent
Temperature Resistance:	
Short Term: (minutes, hours)	300°F (149°C)
Long Term: (days, weeks)	200°F (93°C)

Available Sizes

Standard Length:	36 yds. (32.9 m)
Maximum Length:	1/4 in. (6.4 mm) up to 3/8 in. (9.5 mm) wide - 72 yds. (65.8 m) 3/8 in. (9.5 mm) up to 1/2 in. (12.7 mm) wide - 108 yds. (98.8 m) 1/2 in. (12.7 mm) and wider - 144 yds. (131.6 m)
Minimum Width:	1/4 in. (6.4 mm)
Core Diameter (ID):	3.0 in. (76.2 mm)
Slitting Tolerance:	± 1/64 in. (0.4 mm)

All 3M™ VHB™ Window Tapes are precision slit ± 1/64 in. (0.4 mm).

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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.

Application Ideas

- 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.

Storage

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

Shelf Life

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

Product Use

All statements, technical information and recommendations contained in this document are based upon tests or experience that 3M believes are reliable. However, many factors beyond 3M's control can affect the use and performance of a 3M product in a particular application, including the conditions under which the product is used and the time and environmental conditions in which the product is expected to perform. Since these factors are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for the user's method of application.

Limited Warranty

3M warrants for 24 months from the date of manufacture that 3M™ VHB™ Tape will be free of defects in material and manufacture. 3M MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. This limited warranty does not cover damage resulting from the use or inability to use 3M™ VHB™ Tape due to misuse, workmanship in application, or application or storage not in accordance with 3M recommended procedures.

Limitation of Remedies and Liability

If the 3M™ VHB™ Tape is proved to be defective within the warranty period stated above. THE EXCLUSIVE REMEDY, AT 3M'S OPTION, SHALL BE TO REFUND THE PURCHASE PRICE OF OR TO REPAIR OR REPLACE THE DEFECTIVE 3M™ VHB™ TAPE. 3M shall not otherwise be liable for loss or damages, whether direct, indirect, special, incidental, or consequential, regardless of the legal theory asserted, including negligence, warranty, or strict liability.



This Industrial Adhesives and Tapes Division product was manufactured under a 3M quality system registered to ISO 9001:2000 standards.

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