



Technical Data Sheet

3M™ VHB™ Commercial Vehicle Tape CV45F



[Product Details](#)



[Regulatory Info/SDS](#)

Product Description

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

3M™ VHB™ Commercial Vehicle Tapes are conformable, double-sided, pressure sensitive acrylic foam tapes. The acrylic foam chemistry has outstanding durability, UV resistance and temperature performance. Since 1980, 3M™ VHB™ Tapes have been used for sidewall panel attachment on commercial vehicles such as trailers, truck bodies, ambulances, fire trucks, busses, and rail cars. The high strength, viscoelastic acrylic foam of the the 3M™ VHB™ Commercial Vehicle Tapes provide unique energy absorbing and stress relaxing properties not found in general purpose foam tapes such as polyethylene foam tape.

3M™ VHB™ Commercial Vehicle Tapes provide excellent adhesion to a broad range of materials and surfaces commonly used in the commercial vehicle industry. Common substrates include bare aluminum, bare steel, galvanized steel, painted steel, painted aluminum panels, and fiberglass reinforced plastic panels. The thicker 3M™ VHB™ Commercial Vehicle Tape CV62F is typically used for panel to post attachment. The thinner 3M™ VHB™ Commercial Vehicle Tape CV45F is typically used for panel to panel attachment at an overlap seam.

Note: 3M™ VHB™ Commercial Vehicle Tapes should be thoroughly evaluated by the user under actual use conditions with intended substrates to determine suitability of these tapes for your particular application.

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
Color		Gray
Adhesive Type		Multi-Purpose Acrylic
Density	ASTM D3574	720 kg/m ³ (45 lb/ft ³) ¹
Adhesive Carrier		Conformable Acrylic Closed Cell Foam
Total Tape Thickness	ASTM D3652	1.14 mm (45 mil)
Thickness Tolerance		± 10 %

¹ Foam with adhesive

Attribute Name	Value
Liner	Polyethylene
Primary Liner Color	Red

Typical Performance Characteristics

Temperature: 22 °C (72 °F)

Attribute Name	Test Method	Dwell Time	Substrate	Backing	Value
90° Peel Adhesion	ASTM D3330	72 h	Aluminum	5 mil Aluminum	44 N/cm (25 lb/in) ¹
Overlap Shear Strength	ASTM D1002		Stainless Steel		480 kPa (70 lb/in ²) ²
Normal Tensile	ASTM D897	72 h	Aluminum		590 kPa (85 lb/in ²) ³

¹ 12 in/min (300 mm/min)

² Jaw Speed 0.5 in/min (12.7 mm/min)

³ 1 in² (6.45 cm²), Jaw Speed 0.5 in/min (12.7 mm/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).

Static Shear

Test Method: ASTM D3654

Temperature	Value
22 °C (72 °F)	1,000 g/3.2cm ² ¹
66 °C (150 °F)	500 g/3.2cm ² ¹
93 °C (200 °F)	500 g/3.2cm ² ¹

¹ Holds 10,000 min.

Handling/Application Information

Application Techniques

Depending on the substrates to be bonded, one of the following surface preparation methods may be required to achieve a strong bond:

- 1) Clean Only: Clean with a 50:50 mixture of isopropyl alcohol* and water to remove contaminants; or
- 2) Abrade + Clean: Fine abrading of surface followed by cleaning with a 50:50 mixture of isopropyl alcohol and water; or
- 3) Clean + Adhesion Promoter: Good cleaning with a 50:50 mixture of isopropyl alcohol and water followed by application of an adhesion promoter; or
- 4) Abrade + Clean + Adhesion Promoter: Fine abrading of surface followed by good cleaning with a 50:50 mixture of isopropyl alcohol and water followed by application of an adhesion promoter

Ideal tape application is accomplished when temperature is 70° to 100 °F (21° to 38°C) and the bond is allowed to dwell 72 hours. Tape application to surfaces at temperatures below 60°F (15°C) is generally not recommended. However, on some surfaces with some surface preparations, applications at temperatures lower than 60°F (15°C) may be acceptable. Once properly applied, low temperature holding is generally satisfactory.

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. The tape should experience at least 15 psi (100 kPa) of pressure. 15 pounds (67 N) of downward force with a heavy duty or dense laminate roller (Virtuex Pressure Roller PR3) is often sufficient. The application of pressure facilitates wet-out of the tapes' adhesive onto the prepared surface.

Further surface preparation and application bonding information, including guidelines for bonding at temperatures below 60°F (15°C), is available in the following 3M Technical Bulletins or visit: www.3M.com/vhb:

- Panel Bonding Procedure using 3M™ VHB™ Tape
- Surface Preparation for 3M™ VHB™ Tape Applications

* Consult manufacturer's directions for use and precautions when using cleaning solvents. Consult applicable State and local air quality rules and regulations to confirm that materials used in the cleaning and surface preparation steps are compliant with air quality rules and regulations before use.

Storage and Shelf Life

3M™ VHB™ Commercial Vehicle Tapes have a shelf life of 24 months from date of shipment when stored at 40°F to 100°F (4°C to 38°C) and 0-95% relative humidity. The optimum storage conditions are 72°F (22°C) and 50% relative humidity.

The manufacturing date is available on all 3M™ VHB™ Tape cores as part of the lot number. An example of printing on the tape core is "CV45F 15312 16 7N". The three digits after the number "15" indicate the Julian date (YDDD). In this example, the tape was manufactured in 2015 on the 312th day of the year (November 8, 2015).

Available Sizes

Attribute Name	Value
Core Size (ID)	76.2 mm (3 in)
Normal Slitting Tolerance	± 0.8 mm (± 1/32 in)
Standard Roll Length	32.9 m (36 yd)
Standard Width	12.7, 19.1, 25.4 mm (1/2, 3/4, 1 in)

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.

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