



VHB™ Acrylic Foam Tape

4611 • 4646 • 4655

Technical Data

April, 2001

Product Description

3M™ VHB™ Acrylic Foam Tapes 4611, 4646 and 4655 are double-coated pressure sensitive adhesive tapes for bonding metals and other high surface energy materials. This family of products has excellent temperature resistance and can be used to bond metal parts prior to paint processing.

Construction

Adhesive:	General Purpose Acrylic	
Adhesive Carrier:	Acrylic Foam (closed cell)	
Thickness:	4611 4646 4655	0.045 in (1.1 mm) 0.025 in (0.64 mm) 0.062 in (1.55 mm)
Density:	52 lb/ft ³ (840 kg/m ³)	
Liner:	Red polyethylene film	
Tape Color:	Dark Gray	

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 (stainless steel)	4611 4646 4655	18 lb/in width (315 N/100 mm) 15 lb/in width (250 N/100 mm) 18 lb/in width (315 N/100 mm)
Normal Tensile (alum T-block)	4611 4646 4655	90 lb/in ² (590 kPa) 100 lb/in ² (690 kPa) 80 lb/in ² (550 kPa)
Dynamic Shear (stainless steel)	4611 4646 4655	65 lb/in ² (445 kPa) 80 lb/in ² (550 kPa) 60 lb/in ² (415 kPa)
Static Shear: (stainless steel)	72°F (22°C) 158°F (70°C) 200°F (93°C) 300°F (149°C)	1500 g/0.5 sq in (holds 10,000 min.) 750 g/0.5 sq in (holds 10,000 min.) 750 g/0.5 sq in (holds 10,000 min.) 750 g/0.5 sq in (holds 10,000 min.)
Solvent Resistance:	High	
Shelf Life:	24 months from date of manufacture (stored in original cartons, 70°F [21°C]/50% RH)	
Temperature Resistance:		
Short Term: (minutes, hours)	450°F (232°C)	
Long Term: (days, weeks)	300°F (149°C)	

Available Sizes

Standard Length:	4611 4646 4655	36 yards (32.9 m) 72 yards (65.8 m) 36 yards (32.9 m)
Minimum Width:	1/2 in. (12.7 mm)	
Slitting Tolerance:	± 1/32 in. (0.8 mm)	
Core Size (ID):	3.0 in. (76.2 mm)	

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Application Guidelines

For maximum bond strength, the surfaces should be thoroughly cleaned with a 50:50 mixture of isopropyl alcohol and water. 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 50°F (10°C) is not recommended. 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.

For Additional Information

To request additional product information or to arrange for sales assistance, call toll free 1-800-362-3550. Information also available at 3M.com/bonding.

Certification/Recognition

MSDS: 3M has not prepared an MSDS for these products which are not subjected to the MSDS requirements of the Occupational Safety and Health Administration's Hazard Communication Standard, 29 C.F.R. 1910.1200(b)(6)(v). When used under reasonable conditions or in accordance with the 3M directions for use, these products should not present a health and safety hazard. However, use or processing of the products in a manner not in accordance with the directions for use may affect their performance and present potential health and safety hazards.

TSCA: These products are defined as articles under the Toxic Substances Control Act and therefore, are exempt from inventory listing requirements.

Important Notice

The statements and technical information contained herein are based on tests and data which 3M believes to be reliable, but the accuracy or completeness of such statements and technical information is not guaranteed. User is responsible for determining whether a specific 3M™ VHB™ Tape is fit for a particular purpose and suitable for user's method of application. Please remember that many factors can affect the use and performance of a 3M product in a particular application. The materials to be bonded with the product, the surface preparation of those materials, the product selected for use, the conditions in which the product is used, and the time and environmental conditions in which the product is expected to perform are among the many factors that can affect the use and performance of a 3M product. Given the variety of factors that can affect the use and performance of a 3M product, some of which 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 product is proved to be defective, THE EXCLUSIVE REMEDY, AT 3M'S OPTION, SHALL BE TO REFUND THE PURCHASE PRICE OF OR TO REPAIR OR REPLACE THE DEFECTIVE 3M PRODUCT. 3M shall not otherwise be liable for loss or damages, whether direct, indirect, special, incidental, or consequential, regardless of the legal theory asserted, including, but not limited to, contract, negligence, warranty, or strict liability.

ISO 9002

This Engineered Adhesives Division product was manufactured under a 3M quality system registered to ISO 9002 standards.

3M

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