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Technical Data Sheet

3M™ VHB™ Extrudable Tape GP

English

Last Revision Date: January, 2024

Supersedes: December, 2023

Product Details

Regulatory Info/SDS

Product Description

3M™VHB™ Extrudable Tape GP is a thermoplastic rubber-based pressure sensitive adhesive in filament form factor designed as a high-performance bonding solution via automated application using Nordson ProBond® System.

This product provides adhesion to a broad array of substrates including metals, glass, plastics and paints, and is highly reworkable enabling clean removal during bonding assembly or disassembly processes.

Product Features

- Easy-to-use dispensable bonding solution providing high strength and durability
- Pressure sensitive adhesive properties for immediate handling strength
- Stretch release technology allows easy removal for reworkability and reduced scrap
- Excellent adhesion to metals, glass, rubber, LSE plastics, woven and non-woven textiles, and hard-to-bond materials
- Extruded tape can be laid in variable widths, thicknesses and profiles
- Gap filling capabilities that provide continuous seal against moisture and water
- Meets UL 746C (Polymeric Adhesive Systems, Electrical Equipment – Component)

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 - Adhesive Filament

Attribute Name	Value
Color	Black
Base chemistry	Synthetic rubber
Diameter	8.5 mm
Protective sheath	Polyolefin

Typical Physical Properties - Spool

Attribute Name	Value
Height	36,4 cm
Weight	15.9 kg [1]
Filament length	298 m
Flange Diameter	34,3 cm
Core ID	5.1 cm

[1] Target adhesive weight: 15.0 kg

Typical Physical Properties - Extruded Adhesive

Attribute Name	Value
Extrusion temperature	210 +/-10 °C

Typical Physical Properties - Dispensed Tape

Attribute Name	Value
Color	Black

Typical Performance Characteristics

90° Peel Adhesion

Temperature: 22 °C (72 °F)
Dwell Time: 72 h
Backing: 5 mil Aluminum Foil
Test Method: ASTM D3330

Substrate	Value
Polypropylene (PP)	85 N/cm (48 lb/in) [1]
Stainless Steel	86 N/cm (49 lb/in) [1]

[1] Melted adhesive was extruded directly onto the test substrate at a target thickness of 1.1mm. Extruder temperature was set at 215°C.
The specimens were conditioned for 72h 23°C/50%RH before conditioning/aging and 24h after conditioning/aging prior to testing.
Jaw speed: 300 mm/min.
Failure mode: Clean release from substrate.

Substrate: Stainless Steel
Temperature: 22 °C (72 °F)
Dwell Time: 24 h

Attribute Name	Test Method	Value
Overlap Shear Strength	ASTM D1002	370 kPa (55 lb/in²) [1]

[1] Melted adhesive was extruded directly onto the test substrate for a target thickness of 1.1mm and 0.5in² overlap. Extruder temperature was set at 215°C.
The specimens were conditioned for 72h 23°C/50%RH before conditioning/aging and 24h after conditioning/aging prior to testing.
Jaw speed: 50 mm/min.
Failure mode: Clean release from substrate.

Extruding Considerations

Bead Size

Determine desired initial bead height/width for application based on final bond height and wet-out amount. For melted bonding, the height is probably the most important factor to ensure proper contact with second surface and wet-out. Note that the greater the difference between initial bead height and final bond height, the more pressure will be needed to flow the adhesive.
Sometimes multiple dispenser/motion system settings will achieve similar initial bead sizes. Choose settings with robot speed appropriate for desired application cycle time.

Purging

Purging material from the dispenser may be required in some situations. Depending on the process, a small amount of purging may be required to make the process more consistent (e.g., so that the dispensed bead begins at the same location on the substrate). The amount of purging required will vary depending on the length of time between dispense cycles (longer time requires more purging, short time may require little or no purging), but generally it will be less than 15 grams of material.
If material has not been dispensed or purged for 30 minutes or longer with the material heated at 205°C (400°F), purging 90 grams of material is recommended immediately before dispensing onto a substrate. This will purge potentially degraded material and renew the material in the dispenser.
If material has not been dispensed or purged for 4 hours or longer with the material heated at 205°C (400°F), purging 90 grams of material is recommended, even if not dispensing onto another substrate. This is to reduce risk of degraded material causing issues with the dispensing equipment.
Note that the above recommended time intervals will be shorter if the temperature of the material is higher than 205°C (400°F).
Note that purge time depends on dispense rate (the higher the dispense rate, the lower the purge time), and that purging can be accomplished at a higher rate than the rate used during application in order to minimize purge time.

Storage and Shelf Life

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

Precautionary Information

Refer to Product Label and Material Safety Data Sheet for health and safety information before using this product. For additional health and safety information, call 1-800-364-3577 or (651)-737-6501.

Information

Intended Use: 3M™ VHB™ Extrudable Tape GP is intended for bonding of metals, high and medium surface energy plastics, painted surfaces, and certain low surface energy surfaces.
Restricted Use: 3M advises against the use of this 3M product in any application other than the stated intended use(s), since other applications have not been evaluated by 3M and may result in an unsafe or unintended condition.

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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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