

Technical Data Sheet

3M™ VHB™ Extrudable Tape HC

Regulatory Info/SDS

Product Description

3M™ VHB™ Extrudable Tape HC is a thermoplastic rubber-based pressure sensitive adhesive in filament form factor, optimized for improved bonding and sealing performance, compared to 3M™ VHB™ Extrudable Tape GP, on a broad range of high, medium, and low surface energy substrates including metals, primed glass, and plastics. Designed to withstand direct UV exposure, its formulation delivers enhanced conformability, and can provide a watertight seal in properly designed components. 3M™ VHB™ Extrudable Tape HC is applied using compatible dispensing equipment, enabling the advantages of an automation-ready solution.

Product Features

- Reliable choice for a variety of bonding and sealing applications across multiple markets
- Easy-to-use, dispensable bonding solution that provides high strength and durability
- Pressure-sensitive adhesive properties deliver immediate handling strength
- Can be dispensed in variable widths, thicknesses, and profiles
- Higher conformability allows greater design and process flexibility, enabling stronger bonds than 3M™ VHB™ Extrudable Tape GP
- Improved gap-filling capabilities compared to 3M™ VHB™ Extrudable Tape GP
- Optimized elastic response better dissipates stress compared to 3M™ VHB™ Extrudable Tape GP
- UV-stable and suitable for both interior and exterior applications
- Stretch-release technology allows disassembly and rework of components during production

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]
Flange Diameter	34,3 cm
Core ID	5.1 cm

[1] Minimum adhesive weight: 15.0 kg

Typical Physical Properties - Extruded Adhesive

Attribute Name	Value
Extrusion temperature	200 +/-10 °C

Typical Performance Characteristics

90° Peel Adhesion

Temperature: 23 °C (73 °F)
Dwell Time: 72 h
Test Method: ASTM D3330
Backing: 5 mil Aluminum Foil

Substrate	Value
Stainless Steel	65 N/cm (37 lb/in) [1]
PC/ABS	64 N/cm (36 lb/in) [1]
Glass, Primed	65 N/cm (37 lb/in) [2]

[1] Melted adhesive was extruded between two liners and at a target thickness of 1.1mm. Once cooled, tape was cut to 0.5in wide by 4.5 in strips and then laminated to the backing first and then to the substrate. 15 lb momentary pressure was applied with a roller.

[2] Melted adhesive was extruded between two liners and at a target thickness of 1.1mm. Once cooled, tape was cut to 0.5in wide by 4.5 in strips and then laminated to the backing first and then to the substrate. 15 lb momentary pressure was applied with a roller. Glasss surface primed with 3M™ Silane Glass Treatment AP115.
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.

Temperature: 23 °C (73 °F)
Substrate: Stainless Steel
Dwell Time: 24 h

Attribute Name	Test Method	Value
Overlap Shear Strength	ASTM D1002, ISO 4587	1.1 MPa (164 lb/in²) [1]

[1] Melted adhesive was extruded between two liners and at a target thickness of 1.1mm. Once cooled, tape was cut to 0.5in wide by 1.0in pieces and then laminated to the anodized aluminum coupon and then to the stainess steel substrate. 15 lb momentary pressure was applied with a roller.
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 200 °C (390 °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 200 °C (390 °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 200 °C (390 °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

Store in original cartons at 4-38 °C (40-100 °F) and 0-95 % relative humidity. Optimum storage conditions are 22 °C (72 °F) and 50% relative humidity. When stored under proper conditions, product retains its performance and properties for 24 months from date of manufacture.

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

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.

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ISO Statement

This product was manufactured under a 3M quality system registered to ISO 9001 standards.

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