

3M™ VHB™ Tapes and Double-Sided Foam Tapes
Selection Guide



Fast and Effective Bonding Solutions



3M™ VHB™ Tapes

The ultimate in tape bonding strength

For more than 30 years, industries worldwide have been using 3M VHB tapes for high holding power in static and dynamic loads. Viscoelastic properties absorb shock and distribute stress evenly for bonding power that helps eliminate mechanical fastening in many jobs.



Benefits

- High strength, durable bonds
- Vibration and noise dampening
- Flexible and high expansion
- Seals against moisture

Ideal Markets

- Curtainwall Glazing
- Architectural Panel Bonding
- Interior Fitout
- Aerospace
- Commercial Vehicle
- Commercial Signage
- General Manufacturing



3M™ VHB™ Tapes replace rivets in bonding trailer side panels to stiffeners for a smoother, cleaner appearance and a strong durable bond.



3M™ VHB™ Tapes offer the perfect solution for bonding solar panels to a wide variety of substrates. Offering a reliable bond even in very hot and cold environments.



With high holding power and long-term reliability, 3M™ VHB™ Tape bonds dimensional letters to a painted wall for indoor or outdoor signage.



For quick permanent assembly of cladding and curtain wall panels, 3M™ VHB™ Tapes provide an ideal combination of performance, durability and application ease.

3M™ Double-Sided Foam Tapes

Flexible foam carriers fill gaps and bond irregular surfaces

In bonding rough or irregular surfaces, 3M double coated foam tapes fill gaps and distribute stress uniformly over the bonded area. Depending on the specific tape, the result is a bond line that seals, cushions and dampens vibration, resists impact, withstands a wide temperature range and provides good insulating qualities.



Benefits

- Cushioning and gap filling
- Surface matched adhesives
- Interior and outdoor options

Ideal Markets

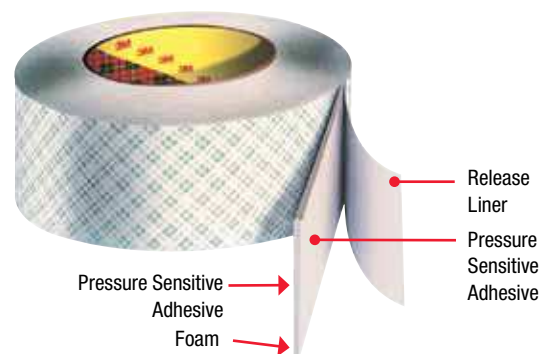
- Commercial Signage
- Shopfitting
- Construction
- Commercial Vehicle
- Factory Maintenance



3M™ Double Coated Urethane Foam Tape 4016 is ideal for mounting flexible posters and signs.



To permanently mount a coat rack to a textured wall, extra thick 3M™ Double Coated Urethane Foam Tape 4008 bonds on contact and fills gaps between the surfaces.



3M™ VHB™ Tapes Bonding Guide

	Product	Key Features	Thickness (mm)	Colour	Acrylic Adhesive Type ¹	Liner Type ²	Solvent Resistance	Temperature Resistance		Plasticiser Resistance	Relative Adhesion ³ HSE (Metal, Glass)	Relative Adhesion ³ HSE (Plastics)	Relative Adhesion ³ LSE (Plastics)	Application Ideas	Availability: A=Aust, N=NZ, ANZ=Both	
								Hours (°C)	Weeks (°C)							
PREMIUM PERFORMANCE	STRUCTURAL GLAZING TAPE	B23F	3M™ VHB™ Structural Glazing Tape B23F is a premium performance structural glazing tape for installing curtainwall glazing units into multi-storey buildings. This product is only available for warranted projects via a 3M Master Distributor.	2.3	Black	HP	F (Printed)	High	149	93	Med	High	High	Low	Structural curtainwall glazing.	A
		G23F	3M™ VHB™ Structural Glazing Tape G23F is a premium performance structural glazing tape for installing curtainwall glazing units into multi-storey buildings. This product is only available for warranted projects via a 3M Master Distributor.	2.3	Grey	HP	F (Printed)	High	149	93	Med	High	High	Low		A
	CONFORMABLE FOAM TAPE	4936	Conformable foam tape for joining textured surfaces and most plastics. Plasticiser resistant for use on flexible vinyl.	0.64	Grey	MP	A	High	149	93	High	High	High	Low	Architectural panel bonding. Commercial construction, commercial signage, commercial vehicles. Bond and seal polycarbonate lens over LCD. Bond and seal plastic windows to pre-painted control panels/switch gear.	NZ
		4941	Conformable foam provides excellent adhesion to mismatched surfaces. Excellent adhesion to painted metal for attaching panel stiffeners in architectural cladding, bus/truck assembly with recommended surface preparation. Ideal for bonding and sealing plastic windows into pre-painted control panels/switch gear.	1.1	Grey	MP	D,A	High	149	93	High	High	High	Low		ANZ
		4956F	Conformable foam provides excellent adhesion to mismatched surfaces. Excellent adhesion to painted metal for architectural panel bonding, bus/truck assembly, with recommended surface preparation.	1.6	Grey	MP	D	High	149	93	High	High	High	Low	Mount vinyl wiring ducts and conduit channels. Seam vinyl banners.	A
		4991F	Conformable foam provides excellent adhesion to mismatched surfaces. Excellent adhesion to painted metal for architectural panel bonding, bus/truck assembly, with recommended surface preparation.	2.3	Grey	MP	D	High	121	93	Good	High	High	Low		ANZ
		4957F	Conformable foam ideal for bonding mismatched surfaces at cold surface temperature, (<10°C), e.g. architectural panels and antennae on vehicles.	1.6	Grey	Low Temp	C	High	149	93	High	High	Med	Low	Bond antennas. Bond automatic toll tags to vehicle.	ANZ
SPECIALISED VHB™ TAPES	FIRM FOAM TAPES	4611	Double coated general purpose closed cell acrylic foam tape, ideal for non-critical applications including bonding metals and other high surface energy materials. High temperature resistance makes it suitable for bonding prior to high temperature paint processing.	1.1	Dark Grey	GP	D	High	149	93	Low	High	Med	Low	Pre-powder coat paint applications: hat channels and stiffeners.	ANZ
		4929	Black version of 4930. Ideal for closely matched surfaces, such as bonding stiffeners in airconditioning units, letter and sign attachment.	0.64	Black	GP	C	High	149	93	Low	High	Med	Low	Attach stiffeners in air conditioners, office furniture and telecommunications equipment.	A
		4930	Good general purpose tape. Ideal for closely matched surfaces, such as bonding stiffeners in furniture, trucks and buses.	0.64	White	GP	C,A	High	149	93	Low	High	Med	Low		ANZ
		4949	Black version of 4950. Ideal for closely matched surfaces, such as bonding stiffeners in furniture trucks and buses.	1.1	Black	GP	C	High	149	93	Low	High	Med	Low		A
		4950	Good general purpose tape. Ideal for closely matched surfaces, such as bonding stiffeners in furniture, trucks and buses.	1.1	White	GP	A	High	149	93	Low	High	Med	Low		ANZ
		4951	Ideal for bonding at cold surface temperature, (<10°C), e.g. stiffeners on architectural panels and e-tags on vehicles.	1.1	White	Low Temp	C	High	149	93	Low	High	Med	Low		ANZ
		4959	High temperature resistant tape. Ideal for bonding aluminium frames and ducting.	3	White	GP	C	High	204	149	Low	High	Low	Low		ANZ
		4945	Plasticiser resistant for vinyl trim in window extrusions in construction, truck and bus assembly.	1.1	White	MP	A	High	149	93	High	High	High	Low	Attach vinyl trim. Bond vinyl extrusions.	ANZ
	CLEAR	4905	Clear construction for joining clear materials such as skylights, lightboxes and translucent signs.	0.5	Clear	GP	D	High	149	93	Low	High	Med	Low	Mount backlit translucent signs. Edge-bond resin filled glass.	ANZ
		4910		1	Clear	GP	D	High	149	93	Low	High	Med	Low		ANZ
		4915		1.5	Clear	GP	D	High	149	93	Low	High	Med	Low		ANZ
		4918		2	Clear	GP	D	High	149	93	Low	High	Med	Low		NZ
	CONFORMABLE FOAM	5915	A very conformable foam tape with a modified acrylic adhesive. Bonds to wide variety of high, medium and medium/low surface energy substrates including most powder coated paints. Bonds to the widest range of substrates.	0.4	Black	M	D	High	149	121	Low	High	High	Low	Bonds to a variety of plastics and paint systems. Various bonding applications for back-lit signs. Bond architectural signs to frames. Bond powder painted metal stiffeners to office desks and file cabinets.	ANZ
		5925	Bonds to the widest range of substrates. Soft foam for textured and uneven surfaces.	0.64	Black	M	D	High	149	121	Low	High	High	Low		NZ
5930		A very conformable foam tape with a modified acrylic adhesive. Bonds high, medium and medium/low surface energy substrates, (including most powder coated paints). Provides handling convenience, cushioning, damping and impact resistance.	0.8	Black	M	D	High	149	121	Low	High	High	Low		A	
5952		Bonds to the widest range of substrates. Modified acrylic adhesive on both sides of very conformable foam, providing adhesion to the broadest range of substrates, including most powder coated paints. For use in metal fabrication, commercial vehicle, signage and appliance applications.	1.1	Black	M	D	High	149	121	Low	High	High	Low		ANZ	
5958FR		Modified acrylic for flame retardant applications in aerospace, marine and rail applications.	1	Black	M	D	High	149	121	Low	High	High	Low		A	
5962		Bonds to the widest range of substrates. Soft foam for textured and uneven surfaces.	1.6	Black	M	D	High	149	121	Low	High	High	Low		NZ	
TRANSFER TAPES	F9469PC	High temperature resistant, high strength adhesive transfer tape for bonding decorative trim to metal, flexible circuits to aluminium rigidisers or heat sinks.	0.13	Clear	100MP	E	High	260	149	Low	High	Med	Low	Industrial joining and metal fabrication. Bond decorative metal trim.	A	
	F9473PC		0.25	Clear	100MP	E	High	260	149	Low	High	Med	Low	Bond flexible circuits to aluminium rigidisers or	ANZ	

¹ HP - High performance acrylic, MP - multi-purpose acrylic, M - Modified acrylic, GP - General purpose acrylic, GM - General purpose/Multi-purpose acrylic.

Multi Purpose Acrylic: Bonds to a wide range of materials including metals, glass, and high and medium surface energy plastics and paints. Resists migration of plasticisers in vinyl substrates.

Modified Acrylic: Bonds to medium low surface energy paints and plastics including many powder coated paints in addition to the substrates listed with the multi-purpose acrylic adhesive (except plasticized vinyl).

General Purpose Acrylic: Bonds to most higher surface energy substrates including metal, glass, and high surface energy plastics.

Low Temperature Acrylic: Bonds down to 0°C compared to 10°C for most acrylic adhesives. Bonds most high surface energy substrates including metal, glass, and high surface energy plastics.

Low Surface Energy: High performance synthetic adhesive bonds to many lower surface energy substrates, including many plastics and powder coated paints, plus smooth general purpose substrates.

3M™ VHB™ Tapes Bonding Guide - continued

	Product	Key Features	Thickness (mm)	Colour	Acrylic Adhesive Type ¹	Liner Type ²	Solvent Resistance	Temperature Resistance		Plasticiser Resistance	Relative Adhesion ³ HSE (Metal, Glass)	Relative Adhesion ³ HSE (Plastics)	Relative Adhesion ³ LSE (Plastics)	Application Ideas	Availability: A=Aust, N=NZ, ANZ=Both	
								Hours (°C)	Weeks (°C)							
GENERAL PURPOSE VHB™ TAPES	GENERAL PURPOSE	4618	Firm adhesive on one side and soft adhesive on other side of a foam carrier. General purpose.	0.64	White	GM	I	High	121	93	Low	High	Med	Low	General Purpose.	NZ
				1.1	White	GM	I	High	121	93	Low	High	Med	Low		
				1.6	White	GM	I	High	121	93	Low	High	Med	Low		
	CONFORMABLE FOAM	RP16	The 3M™ VHB™ RP family is ideal for General Industrial, Interior Fitout and Signage applications, and features a paper liner for die cutting solutions. All acrylic construction gives 3M™ VHB™ RP excellent strength, conformability and versatility indoors and outdoors. Note: DK Paper liner not recommended for exterior applications where liner is exposed to weather/moisture for any prolonged period.	0.4	Grey	MP	A (printed)	High	121	93	Good	High	High	Low	General Industrial, interior fitout and signage applications, and features a paper liner for die cutting solutions.	A
		RP25		0.6	Grey	MP	A (printed)	High	121	93	Good	High	High	Low		
		RP32		0.8	Grey	MP	A (printed)	High	121	93	Good	High	High	Low		
		RP45		1.1	Grey	MP	A (printed)	High	121	93	Good	High	High	Low		
		RP62		1.5	Grey	MP	A (printed)	High	121	93	Good	High	High	Low		

SURFACE PREPARATION AND TOOLS	ADJUVANT	OTHERS	PRIMERS	
			Product	Key Features
		AP111	An isopropyl alcohol based solution used to promote better and faster adhesion of 3M VHB Tapes to bare metals, galvanized steel and painted surfaces.	
		AP115	An isopropyl alcohol based silane solution used to protect uncoated glass surfaces in humid or wet environments from water vapour undercutting the bondline and interfering with normal adhesion forces. Increases adhesion of VHB™ Tapes to glass, stone and ceramics in moist environments.	
		Primer 94	To increase the adhesion of VHB Tapes to LSE surfaces. Available in 0.66ml ampoules, 236ml, 946ml and 3.7L cans.	
		VHB™ Surface Wipes	A cloth (packed in a convenient sachet) soaked in Isopropyl Alcohol that is ideal for cleaning substrates prior to the application of a 3M Tape or Adhesive, especially 3M VHB Tape. Box contains 1000 sachets.	
		hIPA Clean 300	Light duty cleaner (isopropyl alcohol) for cleaning substrates prior to application of PSA's and VHB™ Tape. Available in 300g aerosol cans.	
		J-roller	Roller to apply pressure during application of VHB™ Tape.	
		7447	Scotch-Brite™ Hand Pad features a conformable web and the finest silicon carbide available. Excellent for final finishing, light cleaning and surface preparation. May be used by hand or with a hand block. Abrasive mineral: Ultra fine grade silicon carbide. Colour: Maroon	
		PA-1	This inexpensive, reusable squeegee-type applicator is flexible yet durable. When hand applying film or premask, this tool is the perfect solution for FRP or other textured surfaces.	



3M™ Double-Sided Foam Tapes Bonding Guide

	Product	Key Features	Thickness (mm)	Colour	Acrylic Adhesive Type ¹	Liner Type ²	Solvent Resistance	Temperature Resistance		Plasticiser Resistance	Relative Adhesion ³ HSE	Relative Adhesion ³ LSE (Plastics)	Application Ideas	Availability: A=Aust, N=NZ, ANZ=Both						
								Hours (°C)	Weeks (°C)											
DOUBLE-SIDED FOAM TAPES	LIGHTWEIGHT BONDING	DOUBLE COATED URETHANE FOAM TAPE	4004	Double Coated Urethane Foam Tape. High shear adhesive tape. Application ideas include bonding mirrors to walls and furniture, bonding acoustic panels to walls, mounting air fresheners, soap dispensers, interior signs and nameplates. Can also be used to attach wire clips to various surfaces and mounting electrical channels to wall surfaces. Mount interior signs and nameplates.	6.4	Off White	100	G	Medium	193	104	Low	Excellent	Poor	Bond acoustic panels to walls. Mount air fresheners. Mount soap dispensers. Mount interior signs and nameplates. Attach wire clips to various surfaces. Mount electrical channel to wall.	A				
			4008	Double Coated Urethane Foam Tape. High shear strength adhesive tape. Use to fill gaps and bond irregular surfaces. Distributes stress uniformly over bonded area. Ideal for bonding items such as signs, nameplates and electrical channels to mirrors and walls. Bond acoustic panels to walls.	3.2	Off White	100	G	Medium	193	104	Low	Excellent	Poor			ANZ			
			4016	Double Coated Urethane Foam Tape. Thick open cell urethane foam flexible carrier with high shear, high temperature resistant acrylic adhesive. Ideal for filling gaps, bonding signs and items to rough or irregular surfaces. Mount interior signs and nameplates.	1.6	Off White	100	G	Medium	193	104	Low	Excellent	Poor				ANZ		
			4026	Double Coated Urethane Foam Tapes are conformable foams that offer high shear strength and are available with either a high temperature holding acrylic adhesive system or a rubber adhesive system for bonding to various types of surfaces for mounting, joining and holding. Mount air fresheners and soap dispensers.	1.6	Off White	100	G	Medium	193	104	Low	Excellent	Poor					NZ	
			4032	Double Coated Urethane Foam Tape. Thick open cell urethane foam flexible carrier with high shear, high temperature resistant acrylic adhesive. Ideal for filling gaps, bonding signs and items to rough or irregular surfaces. Attach wire clips to various surfaces.	0.8	Off White	100	G	Medium	193	104	Low	Excellent	Poor						ANZ
			4085	Double Coated Urethane Foam Tape. High Tack adhesive that is excellent for bonding to LSE plastics. Good cushion, conformable, flexible, weather resistant with internal foam strength. Use for mounting indoor signs, nameplates and wall corner protectors to irregular surfaces. Mount trim panels in trailers. Hold polycarbonate panels in vending machines.	1.2	Off White	740	H	Medium	93	152	Low	Excellent	Good						
	SOFT ACRYLIC FOAM	4405	Soft Sealing/Joining Tapes for attaching lightweight objects and sealing applications. Acrylic adhesive with reinforcing scrim. Suitable for external use.	2	Black	Acrylic	J	High	70	49	high	High	High	Attaching lightweight objects and sealing applications. Ideal for joining and sealing uneven surfaces. Can be used on brick, concrete, wood, metal and most plastics. Exterior and interior use. Not recommended for use in high shear applications.	NZ					
		4481		1	Black	Acrylic	K	High	70	49	high	High	High							
		PE FOAM	4466	Double-Sided General Grade Polyethylene Foam (PE) Tape. Multi-purpose Mounting Tapes for attaching lightweight objects. Rubber adhesive on both sides of a closed cell polyethylene foam internal use only.	1.6	White	Acrylic	L	Medium	70	49	Low	High			Low	Attach hooks, wire clips and racks. Mount retail shelf price channels. Mount pen holders.	NZ		

100MP: Bonds with higher peel strength than most other acrylic formulations. Up to 500°F (260°C) short term heat resistance.

² Liner Types: A - 3 mil 54# Densified Kraft Paper, B - 5 mil Clear Polyethylene Film, C - 2 mil Clear Polyester Film, D - 5 mil Red Polyethylene Film, E - 4 mil 58# Polycoated Kraft Paper, F - 5 mil Red Printed Polyethylene Film, G - White 3.0 mil 62# densified kraft paper - green plaid, H - Tan 3.0 mil densified kraft paper, I - 4 mil Green PE Film, J - Paper (pale yellow), K - Paper (white with blue 3M printing), L - Paper white.

³ Relative adhesion with substrate cleaning only.

Note: Adhesion and plasticiser resistance can be improved on some substrates with additional surface preparation, such as abrasion and priming.

Relative Adhesion: HSE - High Surface Energy, LSE - Low Surface Energy.

Refer to Technical Bulletin for use of VHB tapes and recommended surface preparation.



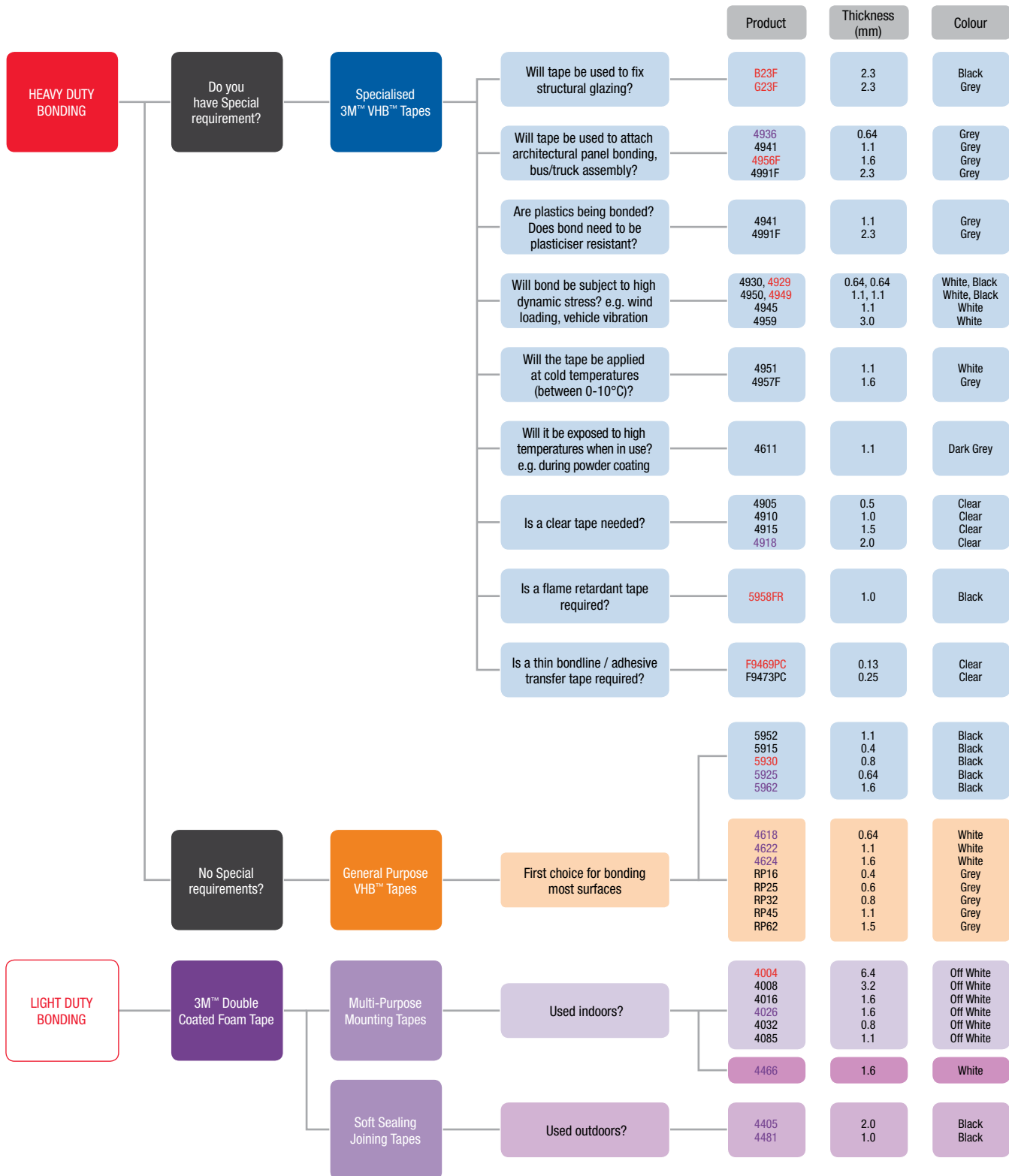
Selecting your Double-Sided Foam Tape

The 3M Double-Sided Foam Tape range provides a bonding solution to meet every requirement. Depending on the surface and gap to be filled, the temperature and application, the product you need may differ in each case. Follow the chart below to assist in choosing the correct tape for your needs.

N.B: If you have a requirement for thinner double-sided tapes, please refer to separate literature or contact 3M directly.

3M™ VHB™ Tapes Quick Guide – Selection Chart

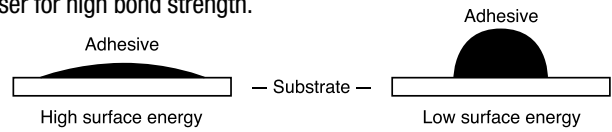
Availability - Colour Code:
Australia & New Zealand
Australia Only
New Zealand Only



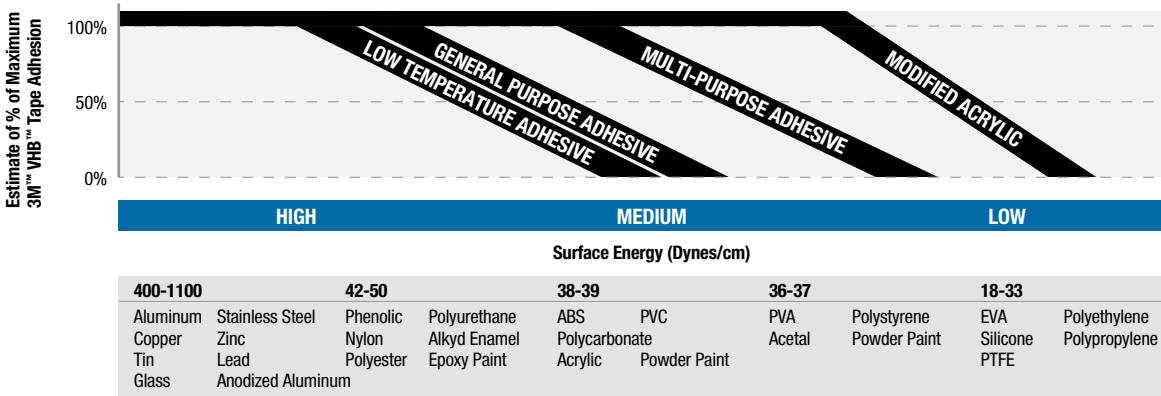
Design and Tape Selection Considerations

Choose the right tape for the substrate: Adhesives must flow onto the substrate surfaces in order to achieve intimate contact area and allow the molecular force of attraction to develop. The degree of flow of the adhesive on the substrate is largely determined by the surface energy of the substrate.

This illustration demonstrates the effect of surface energy on adhesive interfacial contact. High surface energy materials draw the adhesive closer for high bond strength.



Relationship of Adhesion and Surface Energy for 3M™ VHB™ Tape Adhesive Families



NOTE: Low surface energy adhesive may be less affected by surface energy.

NOTE: Foam type can affect and/or limit maximum adhesive strength.

NOTES: There are a wide variety of formulations, surfaces finishes and surface treatments available on substrate materials which can affect adhesion. This chart is intended to provide only a rough estimate of the adhesion levels which can be expected on some common materials relative to a reference surface such as aluminum. Light abrasion of surface will significantly increase adhesion levels on many materials.

Surface Preparation for applying VHB™ Tapes and Double-Sided Foam Tapes

- Most substrates are best prepared by wiping (in one direction) with a 50:50 mixture of isopropyl alcohol (IPA) and water or 3M hIPA Clean 300.
- Where heavy oils or greases are present, there may be a need to first cut the oil with a “degreasing” solvent such as 3M 700 Cleaner. This should always be followed by cleaning with IPA/water mixture.
- Abrasion or scuffing of the surface will in many instances enhance adhesion by increasing the surface area available for bonding. Scuffing must be followed by cleaning with IPA/water mixture.
- The surface must be dry.



Making the bond



Apply the tape to one surface leaving the liner in place.



Apply pressure using a Scotch™ PA-1 applicator or roller. This ensures contact and removes air bubbles.



Remove the liner, fit the two surfaces together carefully and apply more pressure to form a bond.

Please note that the technical information and data provided within should be considered representative or typical only and should not be used for specification purposes.

User should evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for user’s method of application.



Industrial Adhesives and Tapes

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