

3M

VHB[™]
Tape Since 1980

**A strong connection
when it counts.**

3M[™] VHB[™] tape





3M™ VHB™ tape

Since 1980, the continuous development of innovative 3M VHB solutions and applications has contributed to the success of leading companies worldwide.

The 3M VHB tape is now used in a wide variety of sectors such as rail and utility vehicles, electronics, industrial safety signage, windows and doors, household appliances, the construction sector, aviation and the furniture industry.

The continuously further developed product range includes 3M VHB tapes for bonding and sealing numerous materials.

Make beautiful designs possible

Create a seamless facade with a fast, virtually invisible, permanent bond to an even greater number of materials. Advantages:

- Better appearance
- Design flexibility
- Power



The 3M VHB tape...



is a high-quality double-sided tape made from 100% acrylic adhesive with a closed cell structure



gives a very high immediate adhesion



has excellent adhesion properties with high tensile and shear strength



has high temperature, weather, UV and solvent resistance



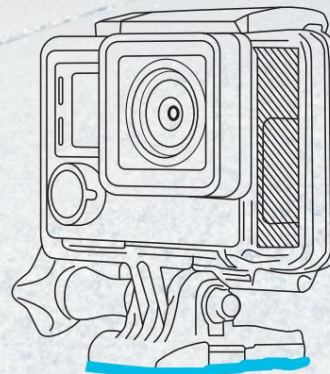
enables tension-free bonding



offers high adaptability to the surfaces to be bonded and seals materials with rough or smooth surfaces



connects materials with high and low surface energy



Capturing extreme images

Secure the parts of your extreme action camera in a shock-resistant and durable manner. Rain, sun, wind, heat and cold: 3M™ VHB™ tape is proven weather resistant and will stand the test of time.

Advantages:

- Weatherproof
- Resistant to vibrations and shocks
- Keeps water and dirt out

Comparison of the 3M™ VHB™ tape with foam tapes

The 3M VHB tape is viscoelastic

An important advantage of 3M VHB tapes over foam tapes is their extreme elasticity and ability to absorb and compensate for energy. Unlike foam tapes, 3M VHB tapes can stretch up to 50% of their thickness without tearing or peeling.



Foam tape

- Tension in the bonding
- Foam carrier prone to cracking

3M VHB Klebeband

- Tension-free bonding
- Energy is absorbed and compensated

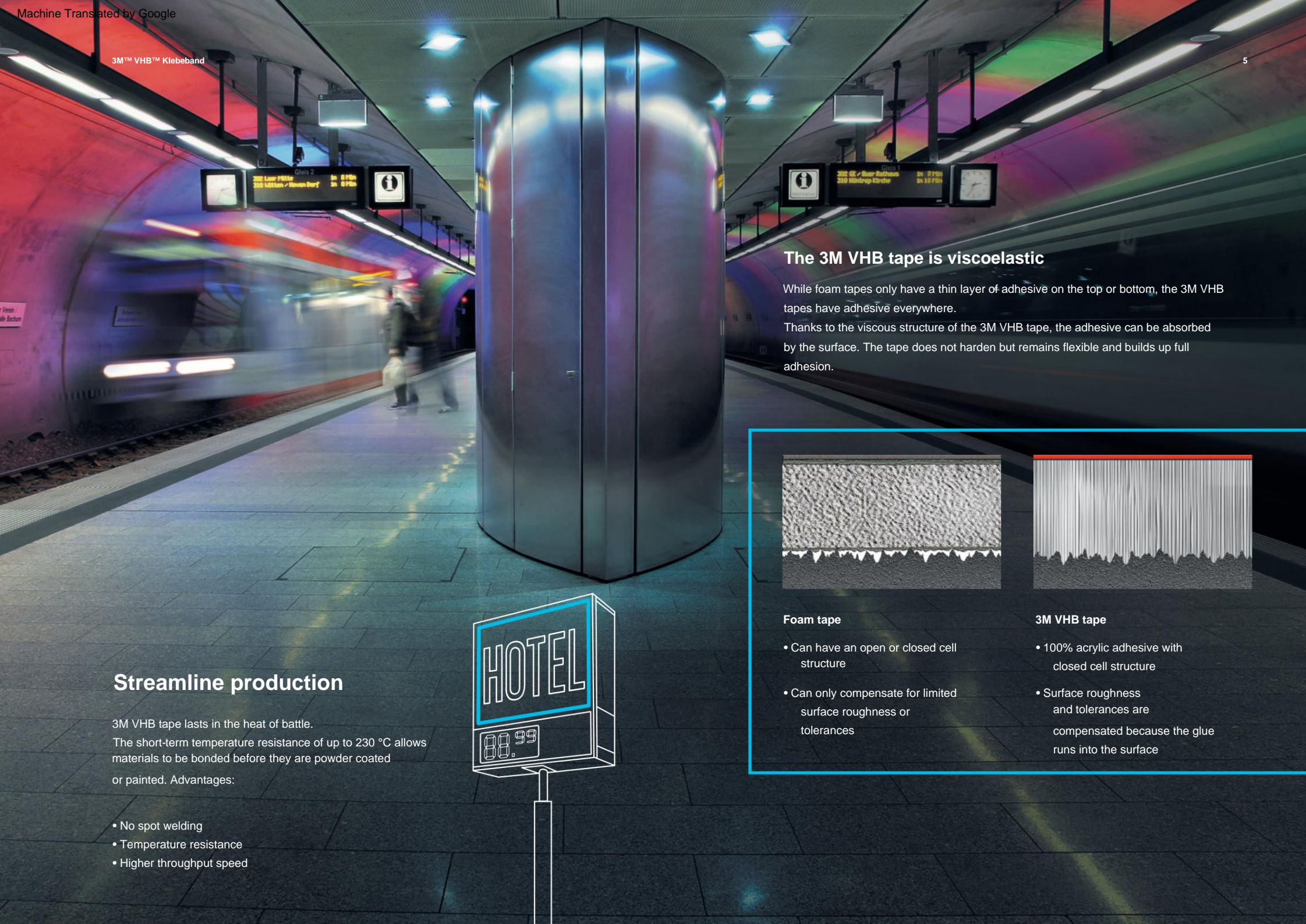


A smooth ride without rivets

Eliminate the need for loose, rattling and leaking rivets and screws. The 3M VHB tape keeps the sides smooth for stickers.

Advantages:

- Powerful and durable
- Lightweight
- Better appearance



Streamline production

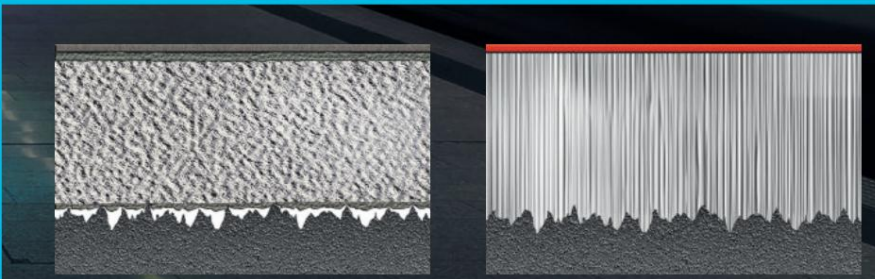
3M VHB tape lasts in the heat of battle. The short-term temperature resistance of up to 230 °C allows materials to be bonded before they are powder coated or painted. Advantages:

- No spot welding
- Temperature resistance
- Higher throughput speed



The 3M VHB tape is viscoelastic

While foam tapes only have a thin layer of adhesive on the top or bottom, the 3M VHB tapes have adhesive everywhere. Thanks to the viscous structure of the 3M VHB tape, the adhesive can be absorbed by the surface. The tape does not harden but remains flexible and builds up full adhesion.



Foam tape

- Can have an open or closed cell structure
- Can only compensate for limited surface roughness or tolerances

3M VHB tape

- 100% acrylic adhesive with closed cell structure
- Surface roughness and tolerances are compensated because the glue runs into the surface

Shearing and tensile forces are usually not problematic, because the force is distributed over the entire surface.

Shear force:

The force acts parallel to the adhesive surface



Traction:

The force acts vertically to the adhesive surface



Splitting and peeling forces, on the other hand, must be avoided constructively, because the forces only act on a small part of the adhesive surface.

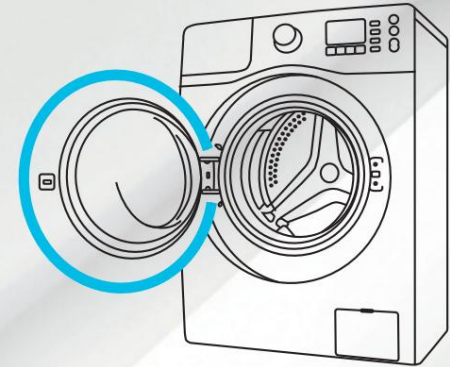
Splitting force:

The force is not uniformly distributed over the bonding surface, but concentrates on one line, both joint parts are rigid



Peel force:

The force only acts on the edges of the glued surface, so that only a very small amount of glue can act against it, at least one joint part is flexible



Bonding multiple materials

Use 3M VHB tape to easily assemble household appliances and to connect materials such as glass and metal easily and securely. Advantages:

- Reduce vibrations
- Bond multiple materials
- Quick installation

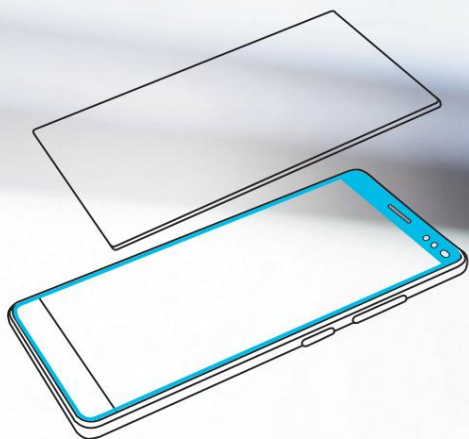
3M VHB tape can be used for bonding and sealing materials...



with high **surface energy**,
such as metal, painted surfaces,
painted wood, glass, many plastics and
ceramics



with low **surface energy**,
such as PE, PP and powder coatings



Make smart devices slimmer

Die-cutting allows you to get the perfect fit when bonding housings, lenses, displays and other parts that require a thin and sleek design. Advantages:

- Bond multiple materials
- Die cutting for precision
- Shock resistant

Benefits of the 3M™ VHB™ tape : compared to mechanical attachment

After more than 30 years, 3M VHB tapes have become the industry standard and offer decisive advantages over mechanical connections such as screws, rivets or weld points.



Design freedom

- The 3M VHB connection remains invisible, unlike screws or rivets



Insulating effect

- The closed and complete connection dampens sounds and reduces vibrations



Even voltage distribution

- Reduces point loads comparison with mechanical fastening elements
- Glued connections distribute the forces evenly
- No thermal warping occurs
- Materials used can be calculated thinner (e.g. wall thickness during welding)



Connections with material combinations

- Different heat expansion coefficients can be compensated (e.g. plastic and metal) • Expansion differences of up to 300% of the tape thickness are possible



Compensating for imperfections

- Components are connected completely and without interruptions
- No restoring forces, stress-free compensation of tolerances after waiting time
- Surface roughness and irregularities are compensated by viscoelastic adhesive (max. 50% of the tape thickness)



Limiting the corrosion risk

- With 3M VHB tape, no holes are required for mounting, the surface protection (e.g. zinc, paint) is not damaged



Sealing function

- Protection against it penetration of dirt or water into the joint construction



Weight reduction

- Clear weight advantage compared to mechanical mounting



Simple and quick attachment

- Speeds up production processes and reduces labor costs – less preparation and fewer adjustments afterwards



Individual customer solutions

- 3M VHB tape is easy to cut and can be punched into special shapes

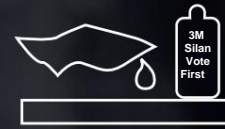
The right product choice



	Product no.	Thickness (mm)	Colour	Adhesion to steel (N/cm)	Temperature resistance (°C)		Density (m³)	Certificates (kg)
					Long-term (days, weeks)	Short term (minutes, hours)		
Ideal for connections with different materials								
<ul style="list-style-type: none"> For connecting high-energy materials such as metals (e.g. steel), numerous plastics and soft PVC For indoor and outdoor Good resistance to plasticizers 	4945	1,10	●	44,0	90	150	800 UL 746C	
	4936	0,64	●	30,0	90	150	720 UL 746C	
	4941	1,10	●	35,0	90	150	720 UL 746C	
	4956	1,55	●	35,0	90	150	720 UL 746C	
	4991	2,30	●	35,0	90	150	720 UL 746C	
	4947	1,10	○	35,0	90	150	720 UL 746C	
	4979	1,55	○	35,0	90	150	720 UL 746C	
For powder-coated surfaces								
<ul style="list-style-type: none"> For connecting low-energy materials such as powder coatings and high-energy materials such as metals (e.g. steel) and many plastics Adapts optimally to the surfaces to be bonded For indoor and outdoor use 	5909	0,30	○	21,0	90	120	750	
	5925	0,64	○	35,0	120	150	590 UL 746C	
	5952	1,10	○	35,0	120	150	590 UL 746C	
	5962	1,55	○	35,0	120	150	640 UL 746C	
At high temperatures and for powder coating								
<ul style="list-style-type: none"> For applications with high operating temperatures, for example for processing in a powder coating line For high- and medium-energy materials, such as metal (e.g. steel) and various plastics (e.g. PA, acrylic glass/PMMA, ABS) For indoor and outdoor use 	GPH-060GF 0,60		●	25,0	150	230	710	
	GPH-110GF 1,10		●	37,0	150	230	710	
	GPH-160GF 1,60		●	34,0	150	230	710	
	4613	1,10	●	32,0	150	230	840	
For critical plastics								
<ul style="list-style-type: none"> For joining difficult-to-stitch areas LSE substrates without primer, such as PP, TPO, GRP, CRP and polyester lacquer Hechting at a temperature of 0 °C (vorstrijk) • For indoor and outdoor use 	LSE-060WF 0,60		●	30,0	100	150	715	
	LSE-110WF 1,10		●	44,0	100	150	715	
	LSE-160WF 1,60		●	54,0	100	150	715	
For transparent materials								
<ul style="list-style-type: none"> For connecting transparent materials, such as glass and numerous plastics For indoor and outdoor 	4905	0,5	○	21,0	90	150	960 UL 746C	
	4910	1,0	○	26,0	90	150	960 UL 746C	
	4915	1,5	○	26,0	90	150	960	
	4918	2,0	○	26,0	90	150	960	
For bonding at low temperatures from 0 °C								
<ul style="list-style-type: none"> For connecting high-energy materials, such as metals and countless plastics For indoor and outdoor 	4943	1,1	●	44,0	90	150	720	
	4957	1,5	●	44,0	90	150	720	
Thin VHB adhesive films								
<ul style="list-style-type: none"> For connecting identical and different ones high-energy materials For indoor and outdoor use 	9460PC 0,05		○	12,0	150	260	980 UL 746C	
	9469PC 0.13		○	13,1	150	260	980 UL 746C	
	9473PC 0,25		○	14,2	150	260	980 UL 746C	

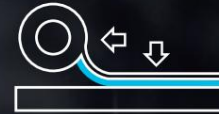
○ Black ● Gray ○ Transparent ● Wit

Simple application



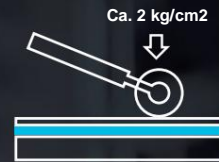
1. Cleaning

- Clean the surfaces with suitable cleaning products
- Use 3M Silan Glass Primer on glass surfaces



2. Apply

- Place tape on the surface to be bonded, but apply it without tension
- Avoid air bubbles
- Do not touch glue and adhesive surface
- Optimal processing temperature: 15 to 25 °C



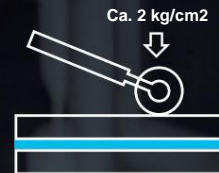
3. Press

- Press/roll the tape firmly with approx. 2 kg/cm²



4. Remove the protective film

- Peel off the protective film in one piece (avoid "stop marks")
- Do not touch the adhesive surface

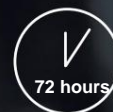


5. Joint and press

- Apply second component
- Avoid air bubbles
- Press with approx. 2 kg/cm²

6. Wait for final adhesive strength

- Only charge after the waiting period has expired
- 50% of the final adhesive strength after approx. 20 minutes
- Final adhesion at 20 °C is achieved after 72 hours
- Heat accelerates the process (e.g. final tack at 65 °C after one hour)





Do you need a product sample?

Please send us an email stating:
of your company, contact person and
the materials to be bonded to:

CustomerserviceBNL@mmm.com



3M Industrial Adhesives & Tapes

3M Belgium bvba/sprl
Hermeslaan 7
1831 Diegem
www.3m.be/tapes

3M Netherlands BV
Molengraaffsingel 29
2629 JD Delft
www.3m.nl/tapes

Important notes: All

above data represents our experience values and does not constitute specifications. Before using our products, please check whether they are suitable for your intended purposes and take into account all possible relevant influences. When using, observe all valid safety and health and safety regulations. All questions regarding warranty and liability for our products are subject to the provisions of the purchase agreement, unless statutory regulations prescribe otherwise.

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