

3M Science.
Applied to Life.™

Durability has never looked this good.

3M™ VHB™ Commercial Vehicle Tapes and
3M™ Adhesive Sealants for smooth sided trailers



3M has been a pioneer in the smooth-sided trailer market for more than 25 years, starting with 3M™ VHB™ Tape. More recently 3M liquid adhesives were added alongside 3M™ VHB™ Tape to enable “combination” builds. As the only manufacturer to offer both 3M™ VHB™ Tape and 3M™ Adhesive Sealants, 3M gives its customers the most simple and effective implementation, with unmatched technical expertise and guidance in the industry. Leaders in the cargo trailer industry trust 3M to help build durable, good-looking and long-lasting trailers — trailers their customers can rely on year-after-year.



Why choose a tape or adhesive?

Benefits of tape and adhesive bonding solutions



- ▶ Improves aesthetics
- ▶ Potential for light weighting
- ▶ Quick and easy application

Benefits of a tape solution



- ▶ Immediate handling strength
- ▶ Bonds and seals
- ▶ Ideal for dynamic loads

Benefits of an adhesive solution



- ▶ Replaces welds and mechanical fasteners
- ▶ High strength allows use of smaller bond areas
- ▶ Quick application time
- ▶ Initially repositionable

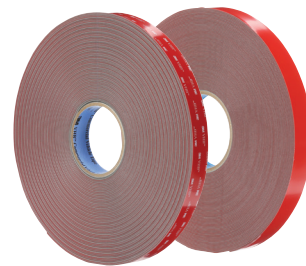
Sidewall Panel Attachment Solutions

Look to the leader in smooth-sided trailer solutions. Sidewall panels bonded with 3M™ VHB™ Tapes alone or in combination with a liquid adhesive will result in a durable, smooth-sided trailer for your customer for years to come.

3M™ VHB™ Commercial Vehicle Tape CV90F/CV62F/CV45F

Since 1980, 3M™ VHB™ Tapes have been used for sidewall panel and roof attachment on commercial vehicles such as trailers, truck bodies, ambulances, fire trucks, buses and rail cars.

- ▶ Reliably bonds a variety of materials with strength and speed for permanent applications
- ▶ High strength, viscoelastic acrylic foam provides unique energy absorbing and stress relaxing properties ideal for transportation applications
- ▶ Eliminates drilling, grinding, refinishing, screwing, welding and clean-up
- ▶ CV90F and CV62F are typically used for panel to post and roof attachment
- ▶ CV45F is used for panel to panel attachment at the overlap seam



3M™ Adhesive Sealants 550FC, 560, 590 and 760UV

Industry leading performance has led to increased adoption of 3M™ Adhesive Sealants over screwed trailers due to speed of application, long-term durability, design flexibility and improved aesthetics.

- ▶ 3M™ VHB™ Tape holds the panels in place while the adhesive sealant cures
- ▶ 3M™ VHB™ Tape is used for overlap seams (panel to post and panel to panel) with adhesive sealant used on intermediate posts
- ▶ Designed to survive extreme service environments; UV and moisture resistant
- ▶ 590 meets FMVSS 212; suitable for structural glass bonding





Roof Sealing and Bonding Solutions

For bonding panels to roof bows, 3M offers a variety of liquid adhesives and tapes that meet both production and performance requirements.

3M™ Adhesive Sealants 540 and 740UV

- Ideal for vertical and horizontal panel bonding and joint sealing
- Long-term durability when exposed to the elements; UV and moisture resistant
- 540 can be painted after adhesive has fully skinned over
- 740UV can be painted while the adhesive is wet



3M™ Extreme Sealing Tape 4410W/G/B, 4411W/G/B and 4412W/G/B

- Flexible TPO backing easily conforms over screw heads, rivets, joints and other protrusions to provide protection from water intrusion
- Immediate seal with no wait time or oozing
- The thick acrylic adhesive provides excellent sealing properties and durability
- Gray, white or black in color with thickness of 0.025 in., 0.040 in. or 0.080 in.



Floor Bonding Solutions

3M offers a variety of adhesives for adhering floor coverings. These solutions meet performance requirements while also addressing common production concerns like increased speed, VOCs and flammability.

3M™ Fastbond™ Contact Adhesive 30NF

- Water-based spray adhesive
- Non-flammable
- Low VOC



3M™ Nitrile Industrial Adhesive 4491

- Fast-drying adhesive delivers rapid results
- Low viscosity grade for spray application
- Resistance to weathering, water, fuels, oil and plasticizers provides long-term durability
- Can be heat cured to obtain superior physical properties



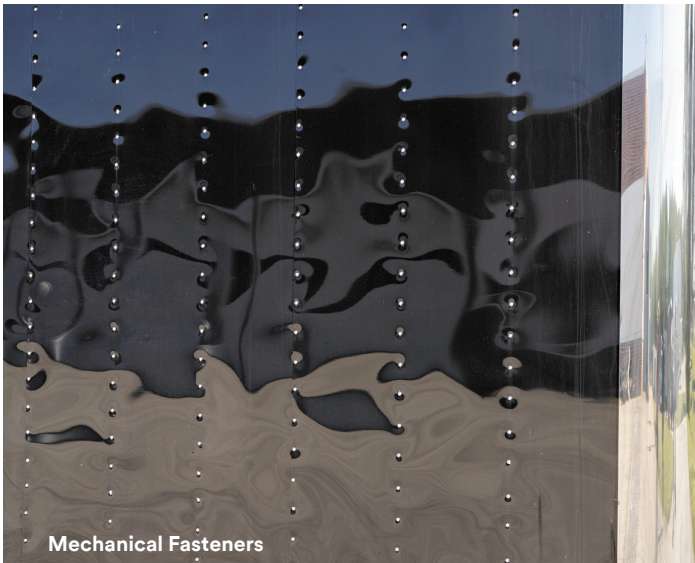
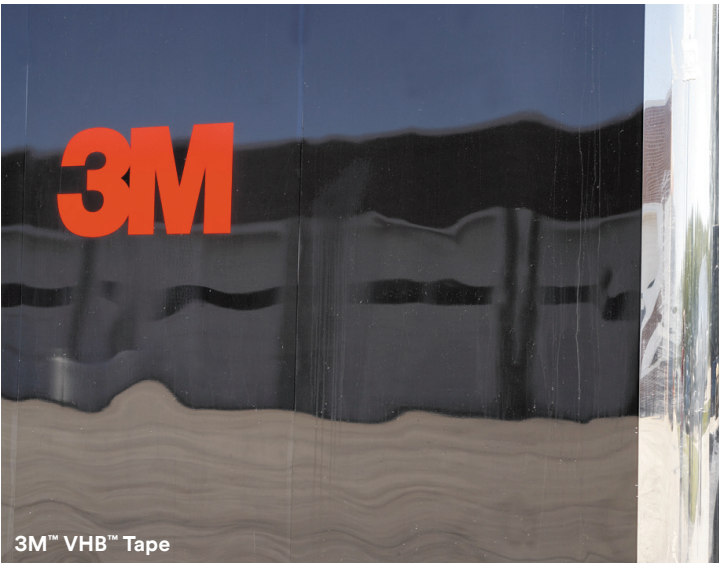
3M™ Hi-Strength Postforming Adhesive 94 CA

- Solvent-based spray adhesive
- Low VOC
- Available in cylinders for convenience and portability



Smooth Sided (3M™ VHB™ Tape) vs. Mechanically-Fastened

Compare the reflections of the smooth-sided trailer at left made with 3M™ VHB™ Tape and the mechanically-fastened trailer at right. Smooth sides convey a professional appearance and quality construction, as well as improve the installation and look of graphics.



Quick Glance Comparison

Customer Wants	3M™ VHB™ Tape	Mechanical Fastener
Durability	Flexes with thermal expansion and contraction	May become loose during thermal expansion and contraction
	Absorbs vibration; helps maintain the bond and seals against water and dirt intrusion	May become loose over time that can lead to leaks
	Separates dissimilar metals to help prevent galvanic corrosion	Dissimilar metals can come in contact that can lead to galvanic corrosion
Aesthetics	Smooth appearance even in the sun's heat	Expands into a quilted pattern in the sun
	Improved appearance of graphics	Surface dotted with rivets and screws
Reduced Noise	Taped panels stay tight helping to reduce rattling	Rigid metal-to-metal attachment of mechanical fasteners transfer sound
	Viscoelastic tape properties help provide sound damping	

Ease of Building with 3M™ VHB™ Tape

Attaching 3M™ VHB™ Tape is different than attachment using rivets or screws. Our experience has shown that once a crew gets the hang of it, the time of assembly is about the same as mechanical assembly. There is less drilling on the line, which means less noise in the factory and reduced chances for operators to develop carpal tunnel syndrome.

“3M™ VHB™ Tape is really easy to work with. I don’t even have to think about it.”

– Aaron Todd
ShowHauler Production



Application	3M Product	Product Features
Sidewall Panel Attachment Solutions	3M™ VHB™ Commercial Vehicle Tape CV90F/CV62F/CV45F	<ul style="list-style-type: none"> ▶ Fast and easy-to-use permanent bonding method provides high strength and long-term durability ▶ Color: Gray ▶ Thickness: CV45F: 0.045 in. (1.1mm); CV62F: 0.062 in. (1.57mm); CV90F: 0.090 in. (2.3mm) ▶ Multi-purpose adhesive and acrylic foam core offers a good balance of strength and conformability ▶ Creates a permanent seal against water, moisture and more ▶ Allows the use of thinner, lighter weight and dissimilar materials ▶ Virtually invisible fastening keeps surfaces smooth
	3M™ Adhesive Sealant 550FC	<ul style="list-style-type: none"> ▶ Multipurpose bonding/sealing ▶ Fast set and cure time for fast-paced processes and productivity ▶ 50–90 minutes tack free time; paintable, once skin forms
	3M™ Adhesive Sealant 560	<ul style="list-style-type: none"> ▶ High strength bonding to replace mechanical fasteners and rivets ▶ Permanently elastic to allow joint movement ▶ 50–60 minutes tack free time; paintable, once skin forms
	3M™ Adhesive Sealant 590	<ul style="list-style-type: none"> ▶ 3 hour safe drive away time (SDAT) and 25–40 minutes tack free time ▶ Crash tested to FMVSS 212, suitable for structural glass bonding
	3M™ Adhesive Sealant 760UV	<ul style="list-style-type: none"> ▶ High performance bonding ▶ Permanently elastic to allow joint movement ▶ 10–30 minutes tack free time, paintable immediately ▶ Excellent UV resistance
Roof Sealing and Bonding Solutions	3M™ Adhesive Sealant 540	<ul style="list-style-type: none"> ▶ Multi-purpose flexible long lasting sealant ▶ Permanently elastic to allow joint movement ▶ 60–90 minutes tack free time; paintable, once skin forms
	3M™ Adhesive Sealant 740UV	<ul style="list-style-type: none"> ▶ High performance sealing ▶ Permanently elastic to allow joint movement ▶ 40–60 minutes tack free time, paintable immediately ▶ Excellent UV resistance
	3M™ Extreme Sealing Tapes 4410+/11+/12+ in black, white or grey.	<ul style="list-style-type: none"> ▶ Designed for difficult sealing applications ▶ Color: White, Gray or Black ▶ Thickness: 0.025 in. (0.6mm), 0.040 in. (1.0mm) or 0.080 in. (2.0mm) ▶ Sticks on contact to many metals, plastics and other hard-to-stick-to surfaces
Floor Bonding Solutions	3M™ Fastbond™ Contact Adhesive 30NF	<ul style="list-style-type: none"> ▶ Water-based contact adhesive ▶ Non-flammable ▶ Can be applied by spray, brush or roller ▶ Low VOC
	3M™ Hi-Strength Postforming Adhesive 94 CA	<ul style="list-style-type: none"> ▶ Fast drying and high coverage adhesive ▶ Available in cylinder or bulk packaging ▶ Low VOC and GREENGUARD™ Certified 
	3M™ Nitrile Industrial Adhesive 4491	<ul style="list-style-type: none"> ▶ Fast-drying adhesive delivers rapid results ▶ Low viscosity grade for spray application ▶ Resistance to weathering, water, fuels, oil and plasticizers provides long-term durability ▶ Can be heat cured to obtain superior physical properties

Optimize your process.

Although applying 3M™ VHB™ Tape by hand is one of the most common application methods, it may be possible to optimize your manufacturing process through simple automation techniques. 3M is excited to offer tools to automate the application of 3M™ VHB™ Tape and other solutions to increase speed of assembly. Use 3M's expertise and partnerships with key automation companies to increase quality, throughput, and productivity helping deliver products to customers faster and, typically, with less labor.



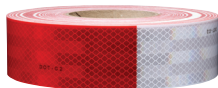


Transportation Safety Solutions

Make your trailer stand out and shine with conspicuity markings from 3M. 3M™ Diamond Grade™ Conspicuity Markings Series 983 and 3M™ Flexible Conspicuity Tape Series 913 tapes feature high reflectivity and long-lasting durability. Help improve safety and protect your trailer with conspicuity markings that are easy to see and apply.

3M™ Diamond Grade™ Conspicuity Markings Series 983

- ▶ High brightness with wide angularity
- ▶ On-site application training available
- ▶ Vivid white and red
- ▶ Durable markings protected by 10-year, prorated warranty



Product #	Description	Available Widths	50-Yd Rolls	2" Cut Strips (100/pkg)
983-32	Red/White (11" x 7")	1.5", 2", 3", 4"	✓	✓
983-326	Red/White (6" x 6")	1.5", 2", 3", 4"	✓	✓
983-10	White	1.5", 2", 3", 4"	✓	✓
983-72	Red	1.5", 2", 3", 4"	✓	✓

3M™ Flexible Conspicuity Tape Series 913

- ▶ UV durable
- ▶ 5-year warranty*
- ▶ Apply in temperatures as low as 35°F**
- ▶ Gray and red



*See Product Bulletin for details on warranty and installation.

**As per installation details described in 3M Product Bulletin Series 913.

▶ To learn more about 3M Conspicuity Tape, contact your distributor, 3M representative or visit 3M.com/Conspicuity.



Abrasives Applied to your Workshop

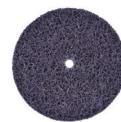
For grinding, polishing, deburring and other metalworking applications, 3M™ Abrasives deliver the performance and quality you need. Team up the unmatched grinding speed and long life of 3M™ Cubitron™ II Abrasives with the ease of use and versatility of Scotch-Brite™ Abrasive Products.



3M™ Flap Disc 769F

- ▶ Fast, consistent cut and long life
- ▶ Ideal for a range of medium- and heavy-duty applications
- ▶ Smooth "feel" for operator comfort and ease of use

Scotch-Brite™ Clean and Strip XT Pro Discs



- ▶ Quickly removes rust, paint, mill scale and coatings from metal
- ▶ High-strength fiber resists chunking and performs well on edges
- ▶ Silicon carbide mineral cuts aggressively and leaves a fine finish

3M™ Cubitron™ II Film Discs 775L



- ▶ Cuts Faster — Increased throughput with faster sanding and more parts per disc
- ▶ Lasts Longer — Lower costs with long disc life and fewer disc changes
- ▶ Consistent Finish — Minimal rework due to consistent finish quality

3M™ Silver Depressed Center Grinding Wheel



- ▶ Designed for heavy grinding, beveling and weld removal
- ▶ May be used on a variety of substrates such as carbon steel and stainless steel
- ▶ 3M Precision-Shaped Grain cuts exceptionally fast, helping increase productivity

Scotch-Brite™ Hand Pads 7447 PRO

- ▶ Ideal for everyday uses like prepping surfaces for color coat; general scuffing, cleaning and hand blending
- ▶ Tightly graded abrasive particles for consistent, uniform scratch throughout life of the hand pad



▶ To learn about 3M™ Abrasives Products, visit 3M.com/Abrasives



Looking for solutions to bonding and assembly challenges?

Across the transportation industry 3M offers a wide range of bonding products that can improve product design and make assembly processes more efficient.

For more information, visit [3M.com/bondingandassembly](https://www.3m.com/bondingandassembly)



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