



WHAT CAN 3M™ ADHESIVES AND TAPES DO FOR YOUR PRODUCT AND PROCESS?

Build strong, durable products:

- From repositionable to permanent, 3M has an adhesive or tape that can be readily matched to the substrate and stress characteristics needed in the joint.

Improve appearance and aesthetics:

- 3M adhesives and tapes are generally hidden between the bonded substrates, offering nearly invisible fastening. Surfaces stay smooth and clean for a more attractive appearance and less surface refinishing.

Lower production and material costs:

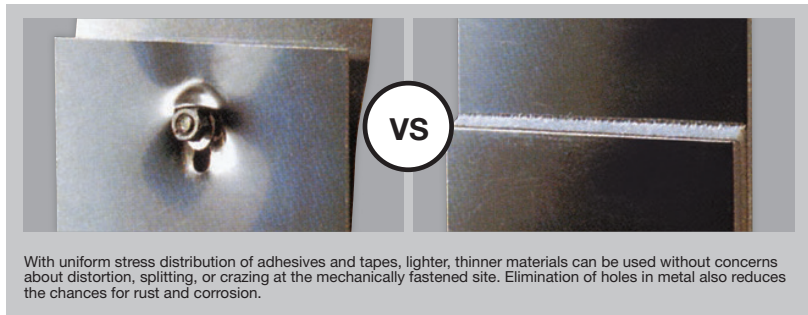
- Reduce process steps such as weld grinding and sealing individual penetrations from screws, nuts and bolts.
- Use thinner, lighter or less expensive materials that cannot be welded or fastened traditionally.
- Potentially lower capital investment. Many adhesives and tapes do not require major capital to use.
- Manage labor costs. Many tape and adhesive technologies require little operator training.

Build products with a continuous bond line:

- Adhesives and tapes uniformly distribute stress along the entire joint. Nuts, bolts and other fasteners concentrate stress at a point which can decrease physical properties of the substrates being assembled.
- Bond and seal simultaneously. Many 3M adhesives and tapes will provide a strong bond, but are also an effective seal against dirt, dust, water and other environmental conditions.
- Good fatigue resistance. If your parts are subject to vibration or other movement, the viscoelastic nature of 3M adhesives and tapes will impart flexibility to a joint or bonded area.

Wider material selection for assemblies:

- Lighter and thinner materials can be used. Welding and fastening weaken substrates and require a minimum thickness to retain integrity.
- Bond dissimilar materials. 3M adhesives and tapes bond to a wide range of substrates from metals, wood, glass, plastics and ceramics. This includes "hard to bond," low surface energy materials.
- Prevent galvanic corrosion. 3M adhesives and tapes can provide a film barrier to reduce or prevent bimetallic corrosion that can occur when joining to different types of metals.



3M ADHESIVES AND TAPES PRODUCT FAMILY



■ 3M™ VHB™ Tapes



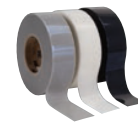
■ 3M™ Double Coated Tapes



■ 3M™ Scotch-Weld™ Threadlockers



■ 3M™ Scotch-Weld™ Structural Adhesives



■ 3M™ Extreme Sealing Tapes



■ 3M™ Adhesive Sealants



■ 3M™ Reclosable Fasteners



CONSIDERATIONS WHEN SELECTING 3M™ ADHESIVES AND TAPES FOR YOUR PRODUCT AND PROCESS



Assembly

- What type of assembly is required?
- What are the overall performance needs of the assembly (flexibility, high peel strength, etc.)?



Substrate

- What are the materials that are being bonded together? (Refer to the substrate selectors for each assembly type.)
- Consider the surface condition texture of each material.



Process

- What is the current assembly and manufacturing process?
- Does the solution need to fit into the current process/equipment or can the process/equipment change?
- What are the various process steps and how quickly will the assembly be moved to each step?
- At any time, might the assembly bond need to be repositioned? If so, why and when?
- Are there any environmental, regulatory or workplace safety restrictions?



End-Use

- How and where is the final product used?
- Will the assembly be exposed to harsh environmental conditions (UV, chemicals, high humidity, very high or low temperatures, etc.)?



Cost

- Where can improvements be made in the assembly process (labor, reduction of process steps, materials, workflow, etc.)?



3M™ SCOTCH-WELD™ STRUCTURAL ADHESIVES

Improving product and process.

In today's world, successful new products demand advancements in both design and manufacturing processes. Industrial engineering and design professionals around the world depend on 3M™ Scotch-Weld™ Structural Adhesives to help them design beyond the limits of mechanical fasteners to create next generation products.

Trusted innovations from aerospace to office space.

Trusted innovations from aerospace to office space. With over 50 years of experience developing innovative structural adhesives for aerospace, automotive and hundreds of other industries, 3M delivers the solutions you can trust. Our advanced formulations create durable bonds, even on challenging materials or in extreme conditions.

Advanced product designs and process innovations.

The benefits of designing and building products with 3M Scotch-Weld Structural Adhesives help drive product success.

- **Freedom of Design:** Improve aesthetics, reduce weight and noise, enhance corrosion and fatigue resistance and more.
- **Process Efficiencies:** Speed production with quiet, fast and easy manufacturing processes.
- **Low Odor Advantages:** Improve your environment with 3M's low odor structural adhesives.
- **Dispensing Options:** Dispense by hand or with automated equipment.

3M global service and support.

3M supports our customers with the testing, technology and training needed to create better products. Our world-wide support staff has the experience you can rely on for everything from structural adhesive selection to process improvement.



Leverage 3M's proven selection of structural adhesives, deep industry expertise and technical support to your advantage.

Design with Confidence.
Built to Last.



SIMPLIFYING ADHESIVE DECISIONS FOR YOUR APPLICATION

What materials will be bonded?

Structural adhesives work by adhering to the top surface of the bonded parts, so it's important to know the exact material and condition on those surfaces. For metals, will the adhesive be applied to bare metal, or will there be a paint or coating on the surface? For plastics, exactly which base resin? Could there be residual release agents on the surfaces used for mold release?

What is the preferred cure speed?

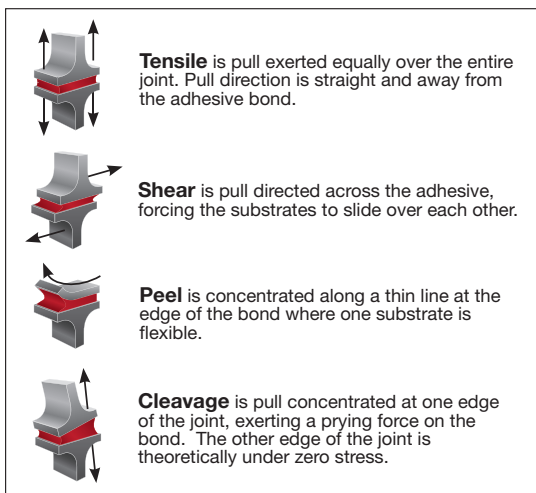
The chosen structural adhesive must have enough work life (open time, pot life) to allow proper mixing and application of the adhesive and assembling of the bonded parts. Smaller assemblies or shorter cycle time production processes may be able to use a faster curing adhesive with a work life of only five minutes or less, while larger assemblies that require alignment and clamping will probably need a work life of 20 minutes or more.

What surface preparation will be required?

Structural adhesives generally prefer clean, rough, dry surfaces for highest bond strength. This typically means either light abrasion and solvent cleaning of the surface, or solvent cleaning followed by chemical etching or applying a primer. Adhesion tests should be performed to determine the adequate surface preparation for a specific application.

What types of joints are best for structural adhesives?

Joint designs that put the adhesive bond under shear, tension, or compression forces will provide the highest strength. Designs that tend to apply peel or cleavage forces to the adhesive, where the applied stresses are not distributed over the entire bond area, will have lower bond strength, but the bond may still be sufficient for the needs of the application. In addition, optimum bond line thickness typically ranges from 0.005" to 0.020". The adhesive qualification process should always include testing of prototype assemblies to ensure the adhesive will provide enough performance.



How are structural adhesives used and applied?

Structural adhesives come in many forms, including low viscosity liquids and non-sag pastes, one- and two-component formulations, short and long work lives, and various package sizes and shapes. Most two-part structural adhesives are available in both bulk containers and convenient, easy-to-use dispense cartridge mixing systems.

What are the general characteristics of the different types of structural adhesives?

All structural adhesives provide at least 1,000 psi of overlap shear strength to aluminum, but each have various properties:

- Epoxy adhesives come in both two-part adhesives (that cure upon mixing the two components) and one-part adhesives (that cure with temperature). Generally, they have the highest strength and overall performance, and provide the best resistance to high temperatures, solvents and outdoor weathering. They adhere well to metals, woods and concrete, and flexible epoxy adhesives also bond to some plastics and rubbers. Epoxy adhesives usually require clean, abraded surfaces to obtain maximum bond strength.
- Acrylic adhesives are two-part adhesives that provide excellent bond strength and durability, although slightly lower than epoxy adhesives. However, they have several features that make them easier to use, including a much faster cure speed, higher tolerance for oily or unprepared bonding surfaces and the ability to bond a wide variety of materials, including nearly all plastics. Newer acrylic adhesive formulations are room temperature stable with a long shelf life, and some have much lower odor than regular acrylic adhesives.
- Urethane adhesives are two-part adhesives that are relatively flexible when cured, have excellent impact resistance and good adhesion to most plastics. They also bond well to woods, concrete and rubbers, but have reduced resistance to solvents and high temperatures. Uncured adhesive components are sensitive to moisture.
- Cyanoacrylate adhesives (instant adhesives) are one-component, lower viscosity liquids that cure extremely quickly with just contact pressure and surface moisture. They adhere well, with thin bond lines, to plastics, metals and rubbers. With the use of primers, they can also adhere to low surface energy plastics and elastomers. They have lower flexibility, peel strength and impact resistance compared to other structural adhesives. They are generally used for gasket bonding and smaller assemblies.
- Anaerobic adhesives are one-part adhesives that cure on active metal surfaces when oxygen gets excluded from the bond line. They keep your factory running efficiently, reducing maintenance and leakage. They do not bond well to glass, plastics or rubbers, and are primarily used for locking threads and sealing pipe connections.



KEY MARKETS AND APPLICATIONS FOR 3M™ SCOTCH-WELD™ STRUCTURAL ADHESIVES



METALWORKING

Key Benefits

- High strength
- Reduces surface preparation
- Replaces mechanical fasteners

Lead Products

DP420NS Black, DP8410NS, LSB60NS



PLASTIC, COMPOSITE & RUBBER

Key Benefits

- Bonds low surface energy plastics without priming
- Impact resistant composite bonding

Lead Products

DP8010 Blue, DP420NS, PR100



SIGNAGE

Key Benefits

- Bonds a variety of materials
- Weather resistant
- UL recognized

Lead Products

DP8805NS, DP8405NS, DP100 Plus



SPECIALTY VEHICLE

Key Benefits

- Reduces weight
- High strength
- Vibration and fatigue resistant

Lead Products

DP8810NS, LSB60NS, TL42

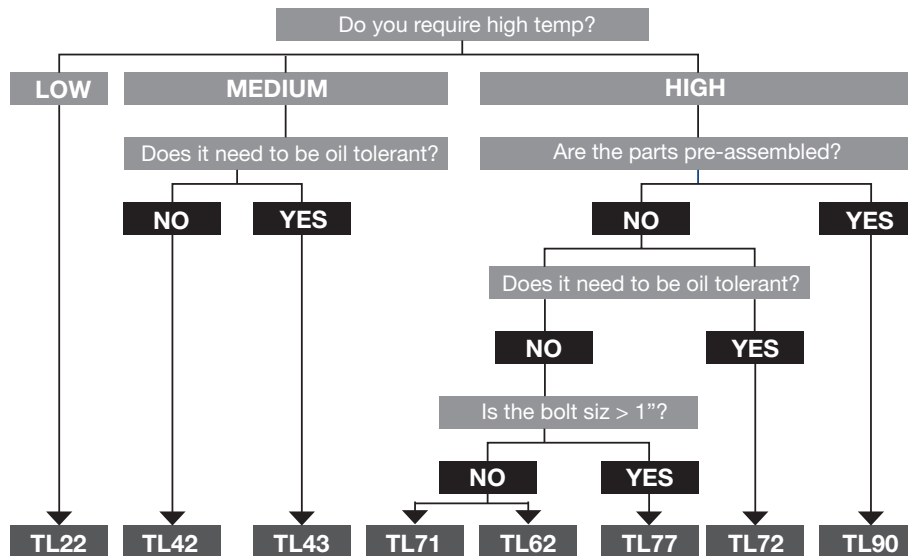




3M™ SCOTCH-WELD™ ANAEROBIC ADHESIVES

3M Catalog Product ID	3M ID Allegis P/N	Box Quantity	Bottle Size	Color (Dry)	Description	Typical Viscosity (cps)	Service Temp. Range °F (°C)	Time to Handle in (Minutes)	Full Cure (Hours)
TL22	62-3493-5060-3	10	50ml	Purple	Screwlock. Low removal torque fasteners less than a 1/4" (6mm)	1200	-65° - 300°F (-54° - 149°C)	20	24
TL42	62-3494-5060-1	10	50ml	Blue	Nutlock. Medium strength. General purpose	1200	-65° - 300°F (-54° - 149°C)	20	24
TL43	62-3428-5060-9	10	50ml	Blue	Oil tolerant. Medium strength. General purpose	3300	-65° - 300°F (-54° - 149°C)	20	24
TL62	62-3495-5060-8	10	50ml	Red	Studlock. High strength with controlled torque tension.	1600	-65° - 300°F (-54° - 149°C)	20	24
TL71	62-3496-5060-6	10	50ml	Red	Permanent studlock for bolts and studs up to 1" (25mm)	500	-65° - 300°F (-54° - 149°C)	20	24
TL72	62-3497-5060-4	10	50ml	Red	High temperature studlock with gap filling for larger diameter coarse threaded parts	7000	-65° - 450°F (-54° - 232°C)	20	24
TL77	62-3429-5060-7	10	50ml	Red	Heavy duty permanent for fasteners up to 1.5" (38mm) with coarse threads.	7000	-65° - 300°F (-54° - 149°C)	20	24
TL90	62-3498-5060-2	10	50ml	Green	Penetrating adhesive for pre-assembled fasteners and porosity sealing of welds.	20	-65° - 300°F (-54° - 149°C)	20	24

3M™ THREADLOCKERS





3M™ ADHESIVE SEALANTS

Flexible Bonding and Sealing Solutions for Avoiding the Elements

In today's world, successful new products demand advancements in both design and manufacturing processes. Industrial engineering and design professionals around the world depend on 3M™ Scotch-Weld™ Structural Adhesives to help them design beyond the limits of mechanical fasteners to create next generation products.



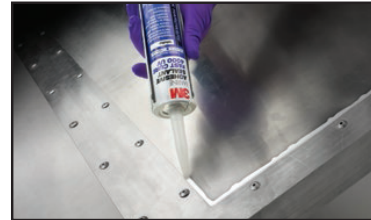
3M™ Polyurethane Sealant 560 moisture cures to a flexible seal/bond between exterior skins and metal framework and between wood flooring and metal framework. Tensile strength up to 580 psi is enough to replace mechanical fasteners in many situations.



3M™ Weatherban™ Sealant Tapes are butyl sealants available in a variety of widths and thicknesses. These are used for applications demanding high tack, aggressive adhesion, weather resistance and flexibility.



3M™ Marine Adhesive Sealant 5200 Fast Cure cures completely in only 48 hours to a strong flexible bond/seal. Applications include: assembly above or below the waterline such as, hull and stern joints, hull to deck seams, marine hardware and more.



3M™ Marine Adhesive Sealant 4000UV has superior UV resistance that is ideal for continuous exposure to sunlight. Applications include specialty vehicle roof seams and marine hardware assembly requiring superior aesthetics.



Seam sealing ductwork with 3M™ Polyurethane Sealant 540 will prevent air and dust intrusion. Its flexibility assists with vibration damping.



For gaps and seams inside of a specialty vehicle, 3M™ Polyurethane Sealant 540 stays flexible and secure at temperature extremes. This benefit allows for thermal expansion/contraction between dissimilar substrates.



3M™ Silane Modified Polymer Adhesive Sealant 740UV has superior UV resistance that is ideal for sealing seams and filling gaps for exterior applications.



3M™ POLYURETHANE ADHESIVE SEALANTS

3M Catalog Product ID	3M ID Allegis P/N	Box Quantity	Size	Package Type	Color (Dry)	Description	Tensile Strength (PSI)	Skin Time (Minutes)	Hardness (Shore A)	Cure Time (MM / 24hr)	Service Temp. Range °F (°C)
540	62-5486-5232-0	12	300ml	Tube	Black	Polyurethane. Moisture cures rapidly to flexible seal for many plastic, metal, wood, and more.	300	60-90	40	3	-40° - 194°F (-40° - 90°C)
540	62-5486-3531-7	12	400ml	Sausage	Black	Polyurethane. Moisture cures rapidly to flexible seal for many plastic, metal, wood, and more.	300	60-90	40	3	-40° - 194°F (-40° - 90°C)
540	62-5486-3931-9	12	600ml	Sausage	Black	Polyurethane. Moisture cures rapidly to flexible seal for many plastic, metal, wood, and more.	300	60-90	40	3	-40° - 194°F (-40° - 90°C)
540	62-5485-5232-2	12	300ml	Tube	Gray	Polyurethane. Moisture cures rapidly to flexible seal for many plastic, metal, wood, and more.	300	60-90	40	3	-40° - 194°F (-40° - 90°C)
540	62-5485-3930-3	12	600ml	Sausage	Gray	Polyurethane. Moisture cures rapidly to flexible seal for many plastic, metal, wood, and more.	300	60-90	40	3	-40° - 194°F (-40° - 90°C)
540	62-5484-5232-5	12	300ml	Tube	White	Polyurethane. Moisture cures rapidly to flexible seal for many plastic, metal, wood, and more.	300	60-90	40	3	-40° - 194°F (-40° - 90°C)
540	62-5484-3531-2	12	400ml	Sausage	White	Polyurethane. Moisture cures rapidly to flexible seal for many plastic, metal, wood, and more.	300	60-90	40	3	-40° - 194°F (-40° - 90°C)
540	62-5484-3931-4	12	600ml	Sausage	White	Polyurethane. Moisture cures rapidly to flexible seal for many plastic, metal, wood, and more.	300	60-90	40	3	-40° - 194°F (-40° - 90°C)
550FC	62-5266-5232-6	12	300ml	Tube	Black	Accelerated 2-part technology. Cures quickly. Fast handling strength.	300	15-25	45	24Hr. Full Cure	-40° - 194°F (-40° - 90°C)
550FC	62-5266-3931-5	12	600ml	Sausage	Black	Accelerated 2-part technology. Cures quickly. Fast handling strength.	300	15-25	45	24Hr. Full Cure	-40° - 194°F (-40° - 90°C)
550FC	62-5267-5232-4	12	300ml	Tube	Gray	Accelerated 2-part technology. Cures quickly. Fast handling strength.	300	15-25	45	24Hr. Full Cure	-40° - 194°F (-40° - 90°C)
550FC	62-5267-3931-3	12	600ml	Sausage	Gray	Accelerated 2-part technology. Cures quickly. Fast handling strength.	300	15-25	45	24Hr. Full Cure	-40° - 194°F (-40° - 90°C)
550FC	62-5265-5232-8	12	300ml	Tube	White	Accelerated 2-part technology. Cures quickly. Fast handling strength.	300	15-25	45	24Hr. Full Cure	-40° - 194°F (-40° - 90°C)
560	62-5488-5232-6	12	300ml	Tube	Black	Similar to the 540 but with 580 psi tensile strength for sealing and bonding. May replace mechanical fasteners.	580	50-60	55	4	-40° - 194°F (-40° - 90°C)
560	62-5488-3931-5	12	600ml	Sausage	Black	Similar to the 540 but with 580 psi tensile strength for sealing and bonding. May replace mechanical fasteners.	580	50-60	55	4	-40° - 194°F (-40° - 90°C)
560	62-5487-5232-8	12	300ml	Tube	Gray	Similar to the 540 but with 580 psi tensile strength for sealing and bonding. May replace mechanical fasteners.	580	50-60	55	4	-40° - 194°F (-40° - 90°C)
560	62-5487-3931-7	12	600ml	Sausage	Gray	Similar to the 540 but with 580 psi tensile strength for sealing and bonding. May replace mechanical fasteners.	580	50-60	55	4	-40° - 194°F (-40° - 90°C)
560	62-5495-5232-1	12	300ml	Tube	White	Similar to the 540 but with 580 psi tensile strength for sealing and bonding. May replace mechanical fasteners.	580	50-60	55	4	-40° - 194°F (-40° - 90°C)
560	62-5495-3930-2	12	600ml	Sausage	White	Similar to the 540 but with 580 psi tensile strength for sealing and bonding. May replace mechanical fasteners.	580	50-60	55	4	-40° - 194°F (-40° - 90°C)



3M™ SILANE MODIFIED POLYMER (SMP) ADHESIVE SEALANTS

3M Catalog Product ID	3M ID Allegis P/N	Box Quantity	Size	Package Type	Color (Dry)	Description	Tensile Strength (PSI)	Skin Time (Minutes)	Hardness (Shore A)	Cure Time (MM / 24hr)	Service Temp. Range °F (°C)
740UV	62-5286-5233-2	12	290ml	Cartridge	Black	Excellent cosmetic sealant. Excellent UV resistance. Low VOC.	145	40-60	30	3.5	-40° - 194°F (-40° - 90°C)
740UV	62-5286-3932-1	12	600ml	Sausage	Black	Excellent cosmetic sealant. Excellent UV resistance. Low VOC.	145	40-60	30	3.5	-40° - 194°F (-40° - 90°C)
740UV	62-5275-5233-5	12	290ml	Cartridge	Gray	Excellent cosmetic sealant. Excellent UV resistance. Low VOC.	145	40-60	30	3.5	-40° - 194°F (-40° - 90°C)
740UV	62-5275-3932-4	12	600ml	Sausage	Gray	Excellent cosmetic sealant. Excellent UV resistance. Low VOC.	145	40-60	30	3.5	-40° - 194°F (-40° - 90°C)
740UV	62-5274-5233-8	12	290ml	Sausage	Gray	Excellent cosmetic sealant. Excellent UV resistance. Low VOC.	145	40-60	30	3.5	-40° - 194°F (-40° - 90°C)
740UV	62-5274-3932-7	12	600ml	Sausage	Gray	Excellent cosmetic sealant. Excellent UV resistance. Low VOC.	145	40-60	30	3.5	-40° - 194°F (-40° - 90°C)
760UV	62-5278-5233-9	12	290ml	Cartridge	Black	Excellent adhesion. Paintable when wet. Low VOC.	260	10-30	55	3.5	-40° - 194°F (-40° - 90°C)
760UV	62-5278-3932-8	12	600ml	Sausage	Black	Excellent adhesion. Paintable when wet. Low VOC.	260	10-30	55	3.5	-40° - 194°F (-40° - 90°C)
760UV	62-5279-5233-7	12	290ml	Cartridge	Gray	Excellent adhesion. Paintable when wet. Low VOC.	260	10-30	55	3.5	-40° - 194°F (-40° - 90°C)
760UV	62-5279-3932-6	12	600ml	Sausage	Gray	Excellent adhesion. Paintable when wet. Low VOC.	260	10-30	55	3.5	-40° - 194°F (-40° - 90°C)
760UV	62-5277-5233-1	12	290ml	Cartridge	White	Excellent adhesion. Paintable when wet. Low VOC.	260	10-30	55	3.5	-40° - 194°F (-40° - 90°C)
760UV	62-5277-3932-0	12	600ml	Sausage	White	Excellent adhesion. Paintable when wet. Low VOC.	260	10-30	55	3.5	-40° - 194°F (-40° - 90°C)
















3M™ MARINE ADHESIVE SEALANTS

3M Catalog Product ID	3M ID Allegis P/N	Box Quantity	Size	Package Type	Color (Dry)	Description	Tensile Strength (PSI)	Skin Time (Minutes)	Hardness (Shore A)	Cure Time (MM / 24hr)	Service Temp. Range °F (°C)
4000UV	62-5563-5232-6	12	1/10gal	Cartridge	White	Silane Modified Polymer (SMP) Adhesive Sealants. Bonds and seals above and below the waterline. Superior UV resistance. Tack free in 22 minutes.	500	15-30	40	3.5	-40° - 194°F (-40° - 90°C)
4000UV	62-5563-3932-3	12	1/10gal	Sausage	White	Silane Modified Polymer (SMP) Adhesive Sealants. Bonds and seals above and below the waterline. Superior UV resistance. Tack free in 22 minutes.	500	15-30	40	3.5	-40° - 194°F (-40° - 90°C)








3M™ SCOTCH-WELD™ EPX™ APPLICATORS AND NOZZLES

For low volume applications and take-it-to-the-job convenience, the 3M™ EPX™ Plus II and 3M™ EPX™ Metal manual applicators comfortably dispense any of the 3M™ Scotch-Weld™ Duo-Pak Structural Adhesives. For higher volume applications, select the 200mL manual dispenser, or the 200mL or 400mL pneumatic dispenser. For concrete repair, there are both manual or pneumatic options.

Product	Replacement Plunger Orders	37mL (2:1) and 42mL (2:3)	45mL (10:1)	50mL (1:1)	200mL (2:1 & 1:1)	400mL (2:1 & 1:1)	490mL (10:1)	Static Mixing Nozzle Options
3M™ Scotch-Weld™ EPX™ Plus II Applicator Stock #: 62-9170-9930-1 UPC: 0-00-21200-50004-6 	1:1 Plunger Stock #: 62-9170-9911-1 UPC: 0-00-21200-50005-3			■				3M™ Scotch-Weld™ EPX™ Mixing Nozzle Square Gold, 37mL and 50mL Stock #: 62-9171-9153-8 UPC: 0-00-21200-50008-4  <hr/> 3M™ Scotch-Weld™ EPX™ Mixing Nozzle Helical White, 37mL and 50mL Stock #: 62-9178-9150-9 UPC: 0-00-51115-81449-0 
	2:1 Plunger Stock #: 62-9170-9921-0 UPC: 0-00-21200-50006-0	■						3M™ Scotch-Weld™ EPX™ Mixing Nozzle Square Gold, 37mL and 50mL Stock #: 62-9171-9153-8 UPC: 0-00-21200-50008-4  <hr/> 3M™ Scotch-Weld™ EPX™ Mixing Nozzle Helical White, 37mL and 50mL Stock #: 62-9178-9150-9 UPC: 0-00-51115-81449-0 
	10:1 Plunger Stock #: 62-9160-9910-4 UPC: 0-00-51115-69044-0			■				3M™ Scotch-Weld™ EPX™ Mixing Nozzle Square, 45mL Stock #: 62-9154-9136-9 UPC: 0-00-51115-69043-3 
3M™ Scotch-Weld™ EPX™ Plus II Applicator Stock #: 62-9740-9935-0 UPC: 0-00-21200-21789-0 	2:1 Plunger Stock #: 62-9744-9930-3 UPC: 0-00-21200-82314-5	■		■				3M™ Scotch-Weld™ EPX™ Mixing Nozzle Square Gold, 37mL and 50mL Stock #: 62-9171-9153-8 UPC: 0-00-21200-50008-4  <hr/> 3M™ Scotch-Weld™ EPX™ Mixing Nozzle Helical White, 37mL and 50mL Stock #: 62-9178-9150-9 UPC: 0-00-51115-81449-5 
3M™ EPX™ Pneumatic Applicator 50mL Stock #: 62-9781-9930-5 UPC: 0-00-21200-83528-5 	N/A	■	■					3M™ Scotch-Weld™ EPX™ Mixing Nozzle Square Gold, 37mL and 50mL Stock #: 62-9171-9153-8 UPC: 0-00-21200-50008-4  <hr/> 3M™ Scotch-Weld™ EPX™ Mixing Nozzle Helical White, 37mL and 50mL Stock #: 62-9178-9150-9 UPC: 0-00-51115-81449-5 
3M™ Scotch-Weld™ EPX™ Manual Applicator 200mL Stock #: 62-9136-9930-2 UPC: 0-00-21200-83528-5 	2:1 Plunger Stock #: 62-9136-9938-5 UPC: 0-00-21200-87981-4				■			3M™ Scotch-Weld™ EPX™ Mixing Nozzle Square Gold, 200mL and 400mL Stock #: 62-9176-9127-1 UPC: 0-00-21200-97331-4  <hr/> 3M™ Scotch-Weld™ EPX™ Mixing Nozzle Helical White, 200mL and 400mL Stock #: 62-9142-9930-0 UPC: 0-00-21200-87982-1 



Product	Replacement Plunger Orders	37mL (2:1) and 42mL (2:3)	45mL (10:1)	50mL (1:1)	200mL (2:1 & 1:1)	400mL (2:1 & 1:1)	490mL (10:1)	Static Mixing Nozzle Options
3M™ EPX™ 200mL, 250mL, 400mL Manual Applicator Stock #: 62-9148-9930-7 UPC: 0-00-51111-98073-6					■	■		3M™ Scotch-Weld™ EPX™ Mixing Nozzle Square Gold, 200mL and 400mL Stock #: 62-9176-9127-1 UPC: 0-00-21200-97331-4 3M™ Scotch-Weld™ EPX™ Mixing Nozzle Helical White, 200mL and 400mL Stock #: 62-9142-9930-0 UPC: 0-00-21200-87982-1
3M™ EPX™ 490mL Manual Applicator Stock #: 62-9182-9930-6 UPC: 0-00-51115-71115-2							■	3M™ Scotch-Weld™ EPX™ Mixing Nozzle Helical Orange, 490mL Stock #: 62-9158-9136-0 UPC: 0-00-51115-69042-6 3M™ Scotch-Weld™ EPX™ Mixing Nozzle Square Green, 490mL Stock #: 62-9184-9490-7 UPC: 0-00-51115-81619-2
3M™ Scotch-Weld™ EPX™ Pneumatic Applicator 200mL Stock #: 62-9140-9930-4 UPC: 0-00-21200-87978-4					■			3M™ Scotch-Weld™ EPX™ Mixing Nozzle Square Gold, 200mL and 400mL Stock #: 62-9176-9127-1 UPC: 0-00-21200-97331-4 3M™ Scotch-Weld™ EPX™ Mixing Nozzle Helical White, 200mL and 400mL Stock #: 62-9142-9930-0 UPC: 0-00-21200-87982-1
3M™ EPX™ 400mL Pneumatic Applicator Stock #: 62-9145-9930-3 UPC: 0-00-21200-87979-1						■		3M™ Scotch-Weld™ EPX™ Mixing Nozzle Square Gold, 200mL and 400mL Stock #: 62-9176-9127-1 UPC: 0-00-21200-97331-4 3M™ Scotch-Weld™ EPX™ Mixing Nozzle Helical White, 200mL and 400mL Stock #: 62-9142-9930-0 UPC: 0-00-21200-87982-1
3M™ EPX™ 490mL Pneumatic Applicator Stock #: 62-9152-9930-9 UPC: 0-00-51115-69041-9							■	3M™ Scotch-Weld™ EPX™ Mixing Nozzle Helical Orange, 490mL Stock #: 62-9158-9136-0 UPC: 0-00-51115-69042-6 3M™ Scotch-Weld™ EPX™ Mixing Nozzle Square Green, 490mL Stock #: 62-9184-9490-7 UPC: 0-00-51115-81619-2
Standard Caulk Gun		3M™ Concrete Repair Urethane 8.4 oz Cartridges					3M™ Concrete Repair 8.4 oz Cartridge Nozzles Stock #: 62-9637-9935-8 UPC: 0-00-48011-53382-7	



3M™ VHB™ TAPES

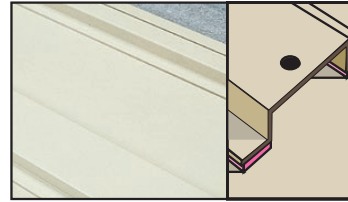
Dream. Design. Deliver.

Since 1980, 3M™ VHB™ Tape has offered unlimited design and application possibilities. By working with 3M's engineering experts, product designers know they can count on this reliable solution. Lab-tested and proven in the real world, 3M™ VHB™ Tape eliminates rivets, bolts, screws and welds.

- Durability for long-term performance indoors and out
- Productivity through application ease and versatility
- Instant bonding
- Smooth, invisible appearance
- Viscoelastic properties absorb shock and distribute stress evenly over the bond line
- Bond dissimilar materials with confidence



3M™ VHB™ Tape bonds panels to a bus on contact. The tape seals against water, moisture and more. Bonding power eliminates mechanical fasteners for a smooth, clean surface. Viscoelastic properties help absorb shock and vibration for bond reliability.



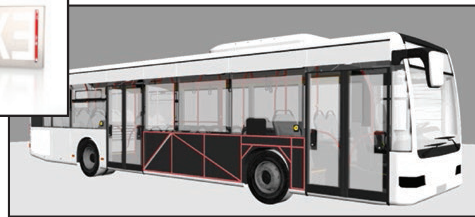
3M™ VHB™ Tapes bond panel stiffeners on contact to pre-painted metal cabinetry. Unlike welding, applying the tape does not damage the finish.

3M™ VHB™ TAPES — TYPICAL APPLICATIONS

3M™ VHB™ Tape is a proven high-strength alternative to screws, rivets, welds and other forms of traditional fastening methods. While a screw or a rivet can join two substrates at a single point, 3M™ VHB™ Tape permanently adheres one substrate to another and spreads the stress load across the entire length of the joint. The most common applications for 3M™ VHB™ Tape are:

PANEL TO FRAME APPLICATIONS

- Reduce weight and solve dynamic force challenges
- Create a clean appearance



STIFFENER TO PANEL APPLICATIONS

- Exceptional vibration and corrosion resistance
- Deliver unique designs



LENS WINDOW TO HOUSING APPLICATIONS

- Securely seal dissimilar materials
- Enhance productivity
- Create innovative designs





3M™ VHB™ TAPES

3M Catalog Product ID	3M ID Allegis P/N	Tape Thickness w/o Liner mils (mm)	Color	Adhesive Type	Width (Inches)	Roll Length (Feet)	Box Quantity	Solvent Resistance	Relative Adhesion HSE / LSE	Temp. Resistance Minutes/Hours	Temp. Resistance Days/Weeks
4941F	70-0063-5861-1	45 (1.1)	Gray	Multi Purpose Acrylic	0.50	108	18	High	High/Medium	300°F (149°C)	200°F (93°C)
4941F	70-0062-1483-0	45 (1.1)	Gray	Multi Purpose Acrylic	0.75	108	12	High	High/Medium	300°F (149°C)	200°F (93°C)
4941F	70-0061-7809-2	45 (1.1)	Gray	Multi Purpose Acrylic	1.00	108	9	High	High/Medium	300°F (149°C)	200°F (93°C)
5925	70-0062-9307-3	25 (0.6)	Black	Modified Acrylic	0.50	108	18	High	High/Medium	300°F (149°C)	250°F (121°C)
5925	70-0062-9305-7	25 (0.6)	Black	Modified Acrylic	1.00	108	9	High	High/Medium	300°F (149°C)	250°F (121°C)
5952	70-0062-9144-0	45 (1.1)	Black	Modified Acrylic	0.50	108	18	High	High/Medium	300°F (149°C)	250°F (121°C)
5952	70-0063-5998-1	45 (1.1)	Black	Modified Acrylic	0.75	108	12	High	High/Medium	300°F (149°C)	250°F (121°C)
5952	70-0062-9306-5	45 (1.1)	Black	Modified Acrylic	1.00	108	9	High	High/Medium	300°F (149°C)	250°F (121°C)
RP25	70-0067-0889-8	25 (0.6)	Gray	Multi Purpose Acrylic	0.50	108	18	High	High/Medium	250°F (121°C)	200°F (93°C)
RP25	70-0067-0890-6	25 (0.6)	Gray	Multi Purpose Acrylic	0.75	108	12	High	High/Medium	250°F (121°C)	200°F (93°C)
RP25	70-0067-0814-6	25 (0.6)	Gray	Multi Purpose Acrylic	1.00	108	9	High	High/Medium	250°F (121°C)	200°F (93°C)
RP45	70-0067-0893-0	45 (1.1)	Gray	Multi Purpose Acrylic	0.50	108	18	High	High/Medium	250°F (121°C)	200°F (93°C)
RP45	70-0067-0894-8	45 (1.1)	Gray	Multi Purpose Acrylic	0.75	108	12	High	High/Medium	250°F (121°C)	200°F (93°C)
RP45	70-0067-0816-1	45 (1.1)	Gray	Multi Purpose Acrylic	1.00	108	9	High	High/Medium	250°F (121°C)	200°F (93°C)
RP62	70-0067-0895-5	62 (1.6)	Gray	Multi Purpose Acrylic	0.50	108	18	High	High/Medium	250°F (121°C)	200°F (93°C)
RP62	70-0067-0896-3	62 (1.6)	Gray	Multi Purpose Acrylic	0.75	108	12	High	High/Medium	250°F (121°C)	200°F (93°C)
RP62	70-0067-0817-9	62 (1.6)	Gray	Multi Purpose Acrylic	1.00	108	9	High	High/Medium	250°F (121°C)	200°F (93°C)
4905	70-0061-7849-8	20 (0.5)	Clear	General Purpose Acrylic	0.50	216	18	High	High/Medium	300°F (149°C)	200°F (93°C)
4905	70-0061-5137-0	20 (0.5)	Clear	General Purpose Acrylic	0.75	216	12	High	High/Medium	300°F (149°C)	200°F (93°C)
4905	70-0061-7850-6	20 (0.5)	Clear	General Purpose Acrylic	1.00	216	9	High	High/Medium	300°F (149°C)	200°F (93°C)
4910	70-0061-2286-8	40 (1.0)	Clear	General Purpose Acrylic	0.50	108	18	High	High/Medium	300°F (149°C)	200°F (93°C)
4910	70-0061-2287-6	40 (1.0)	Clear	General Purpose Acrylic	0.75	108	12	High	High/Medium	300°F (149°C)	200°F (93°C)
4910	70-0061-2288-4	40 (1.0)	Clear	General Purpose Acrylic	1.00	108	9	High	High/Medium	300°F (149°C)	200°F (93°C)
4932	70-0061-0296-9	25 (0.6)	White	Low Surface Energy	0.50	216	18	High	High/Medium	200°F (93°C)	160°F (71°C)
4932	70-0061-0297-7	25 (0.6)	White	Low Surface Energy	0.75	216	12	High	High/Medium	200°F (93°C)	160°F (71°C)
4932	70-0061-0298-5	25 (0.6)	White	Low Surface Energy	1.00	216	9	High	High/Medium	200°F (93°C)	160°F (71°C)
4952	70-0061-0293-6	45 (1.1)	White	Low Surface Energy	0.50	108	18	High	High/Medium	200°F (93°C)	160°F (71°C)
4952	70-0061-0294-4	45 (1.1)	White	Low Surface Energy	0.75	108	12	High	High/Medium	200°F (93°C)	160°F (71°C)
4952	70-0061-0295-1	45 (1.1)	White	Low Surface Energy	1.00	108	9	High	High/Medium	200°F (93°C)	160°F (71°C)
4611	70-0062-9389-1	45 (1.1)	Dark Grey	General Purpose Acrylic	0.50	108	18	High	High/Medium	450°F (232°C)	300°F (149°C)
4611	70-0062-9161-4	45 (1.1)	Dark Grey	General Purpose Acrylic	0.75	108	12	High	High/Medium	450°F (232°C)	300°F (149°C)
4611	70-0062-9257-0	45 (1.1)	Dark Grey	General Purpose Acrylic	1.00	108	9	High	High/Medium	450°F (232°C)	300°F (149°C)



3M™ VHB™ TAPE FOR COMMERCIAL VEHICLES AND TRAILERS

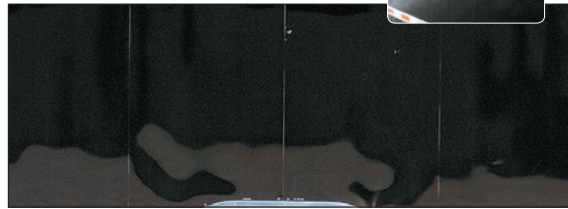
Built Tough with Smooth Sides to Look Good for the Long Haul

For durability and smooth sides on trailers, trucks, buses, and other commercial vehicles, 3M™ VHB™ Tapes are proven to go the distance.

- 3M™ VHB™ Tape is up to 41% quieter than mechanical fasteners with up to 30% less vibration at highway speeds
- Surfaces of truck panels are aesthetically smooth and graphics apply easily
- Permanently bonds and seals
- 3M™ VHB™ Tapes for Commercial Vehicles and Trailers are only available through authorized distributors and a warranty may be available on pre-approved applications.



Mechanically fastened at 36,000 miles
— leaks at less than 75 psi.



Smooth sides with 3M™ VHB™ Tape at 100,000 miles
— no leaks at 3200 psi.

3M Catalog Product ID	3M ID Allegis P/N	Tape Thickness w/o Liner mils (mm)	Color	Adhesive Type	Width (Inches)	Roll Length (Feet)	Box Quantity	Solvent Resistance	Relative Adhesion HSE / LSE	Temp. Resistance Minutes/Hours	Temp. Resistance Days/Weeks
CV62F	70-0064-1063-6	62 (1.6)	Gray	Multi Purpose Acrylic	0.50	108	18	High	N/A	300°F (149°C)	200°F (93°C)
CV62F	70-0064-1065-1	62 (1.6)	Gray	Multi Purpose Acrylic	1.00	108	9	High	N/A	300°F (149°C)	200°F (93°C)



3M™ EXTREME SEALING TAPES

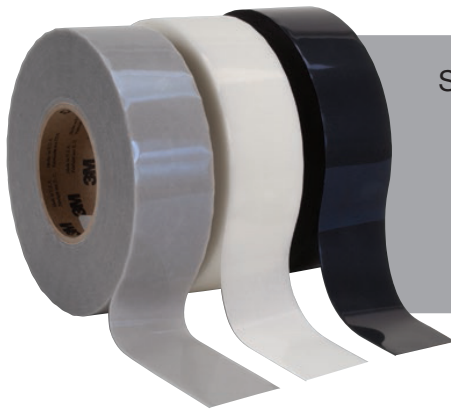
From Trailer, Bus and Rail Car Roof Seams to Metal Enclosures, a Sure Winner Over Traditional Sealants

For durability and smooth sides on trailers, trucks, buses, and other commercial vehicles, 3M™ VHB™ Tapes are proven to go the distance.

- Sticks on contact to many metals and plastics without dripping, oozing or clean-up
- Increases productivity throughput with no drying time; immediately paintable*
- Conforms over contours, edges, rivets and screw heads for a water tight seal
- Looks neat and precise for improved aesthetics
- Outstanding resistance to many common industrial solvents
- Excellent resistance to abrasion and high pressure washing



* Accepts many paints. Test paint on tape to check for compatibility.



Suggested Uses

- RV trailer and roofs
- Metal enclosures
- Awnings
- Trailer home roofs
- Metal storage buildings
- Vent stacks/windows
- Gutters and downspouts
- Skylights
- Outdoor signs/displays
- Leak patching and repairs

3M Catalog Product ID	3M ID Allegis P/N	Tape Thickness w/o Liner mils (mm)	Color	Adhesive Type	Width (Inches)	Roll Length (Feet)	Box Quantity	Tensile Strength LB/IN (N/CM)
4411G	70-0067-3132-0	40 (1.0)	Gray	Ionomer Film/Pressure Sensitive Acrylic	2.00	108	6	13 (23)
4411N	70-0067-3131-2	40 (1.0)	Neutral	Ionomer Film/Pressure Sensitive Acrylic	2.00	108	6	13 (23)
4411B	70-0067-3133-8	40 (1.0)	Black	Ionomer Film/Pressure Sensitive Acrylic	2.00	108	6	13 (23)
4412N	70-0067-0881-5	80 (2.0)	Neutral	Ionomer Film/Pressure Sensitive Acrylic	2.00	54	6	13 (23)



3M™ DUAL LOCK™ RECLOSABLE FASTENERS

Holding Power to Replace Screws, Bolts and Rivets

Durable enough to last through repeated opening and closing. Unique mushroom-shaped heads snap shut and stay locked.

- Durable — up to 1,000 openings and closings before losing 50% of original tensile strength
- Helps reduce vibration
- Temperature, moisture and U V resistant
- Strong, pressure-sensitive adhesive bonds on contact
- Interlocking mushroom-shaped heads have 5X the tensile strength of hook-and-loop products



3M™ Dual Lock™ Reclosable Fasteners

3M Catalog Product ID	3M ID Allegis P/N	Width (Inches)	MOQ (Rolls)	Feet Per Roll	Color	Description	Temperature Resistance °F (°C)	Use
Adhesive		White Acrylic						
SJ3550	70-0705-2110-2	1	2	150	Black	Dual Lock	200° (93°)	Indoor/Outdoor
SJ3550	70-0705-2111-0	2	1	150	Black	Dual Lock	200° (93°)	Indoor/Outdoor



Secure plastic signs to window glass.



Anchor vehicle accessories to dashboard.



Attach elevator control panel to interior wall.



Fasten ceiling panels to interior for future access.



Attach access panels to industrial, electronic and electrical equipment.



3M™ HOOK AND LOOP RECLOSABLE FASTENERS

Hooks on One Side, Loops on the Other for Secure, Repeated Closures

- Reliable PSA holds on contact with a variety of materials
- Low profile options, as much as 75% thinner than standard product
- Up to 5,000 closures for standard Hook and Loop
- Flame resistant product available
- Also available without adhesive



Attach cushioning panels in an ambulance or bus.



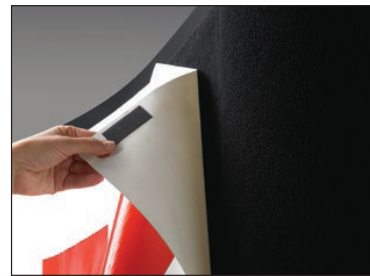
Sew to the fabric and leather of jackets and gloves.



Use as a replacement for string, tapes, rubber bands, wire and strapping.



Attach removable seat cushions.



Hang graphics and banners that change frequently.

3M Catalog Product ID	3M ID Allegis P/N	Width (Inches)	MOQ (Rolls)	Feet Per Roll	Color	Description	Temperature Resistance °F (°C)	Use	
Adhesive		High Performance Acrylic							
SJ3572	70-0704-2842-3	1	3	150	Black	Hook	200° (93°)	Indoor/Outdoor	
SJ3571	70-0704-2841-5	1	3	150	Black	Loop	200° (93°)	Indoor/Outdoor	
SJ3572	70-0704-2900-9	2	2	150	Black	Hook	200° (93°)	Indoor/Outdoor	
SJ3571	70-0704-5783-6	2	2	150	Black	Loop	200° (93°)	Indoor/Outdoor	