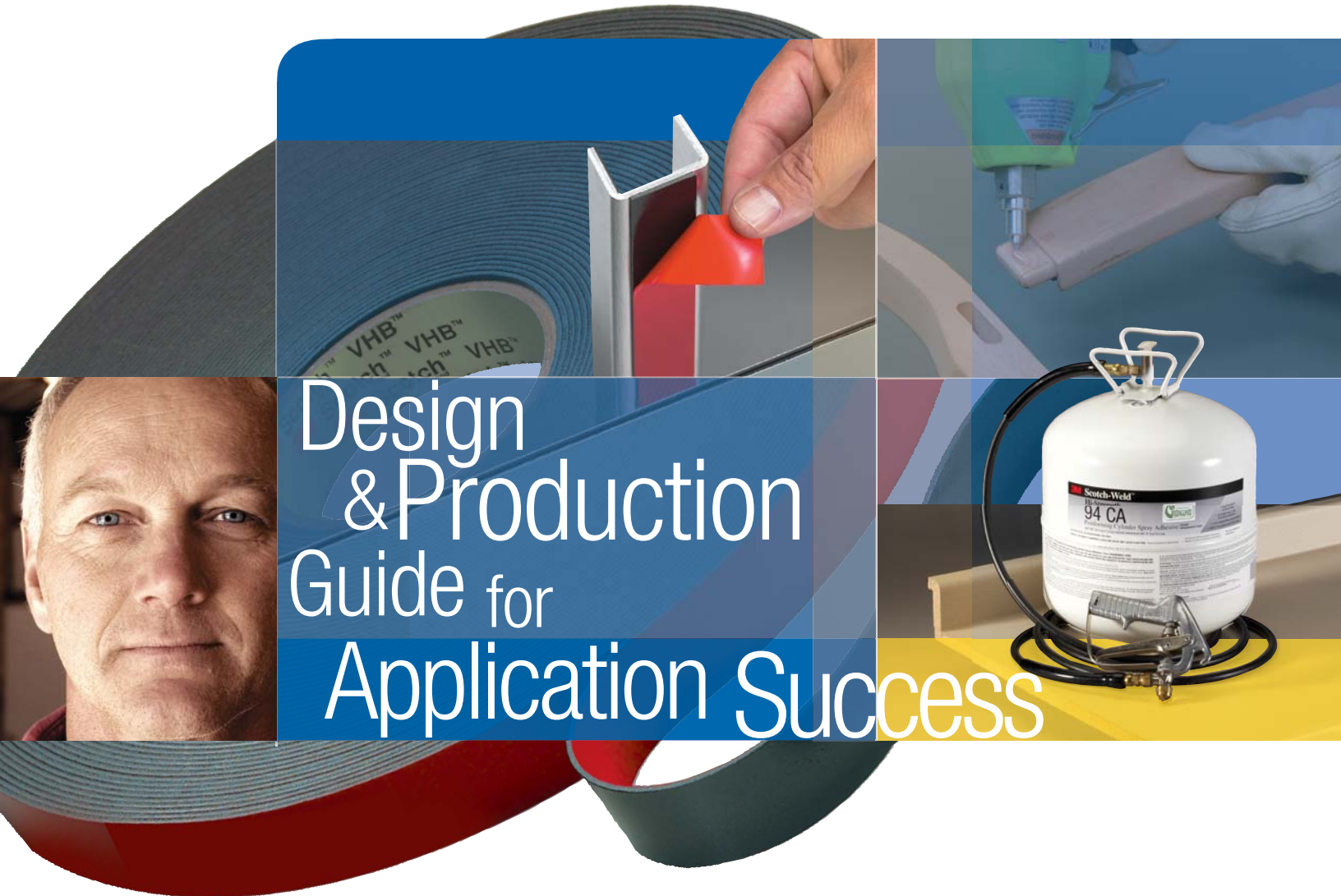


# 3M™ Adhesives and Tapes



## Design & Production Guide for Application Success

Bonding, sealing, attaching,  
mounting, laminating, and fastening



# Name your substrate combination...and read on for applications success

Steel to aluminum. Oak to pine. Decorative laminate to particle board. Vinyl to flexible foam. Glass to plastic. EPDM rubber to ceramic. Low surface energy plastic to oily steel. Styrene to concrete.

Name your combination.

Most likely you'll find what you need in this Guide to improve your product performance and appearance, and increase production efficiency. On the following pages, you'll find the results of more than 50 years developing and applying adhesive technology to solve the real world challenges of companies that need to design and build more competitive products.

From the most versatile and comprehensive line of adhesives and tapes available, you'll find all of the following for application success:

- **Bond strength matched to the job.** That's the full range from repositionable to strength enough to replace rivets, screws, and welds.
- **Virtually invisible fastening.** In most applications, surfaces stay smooth and clean.
- **Increased material options.** Use thinner, lighter materials and even dissimilar materials as design and cost-saving solutions.
- **Increase manufacturing efficiency.** Reduce or eliminate operations such as riveting, drilling, welding, surface refinishing, and cleanup in many applications.
- **Bond, seal and fill gaps in one step.** Save time and work.
- **Solutions through service**  
3M representatives are located throughout the United States, Canada, and 50 other countries for sales assistance.

For technical service, a highly trained team is ready to help you evaluate adhesives and tapes for specific applications.

A national authorized distributor network provides sales assistance and local product availability. Authorized converters can also help you adapt 3M adhesives and tapes to meet special requirements for shape, size, and production.

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Get connected with all 3M adhesives and tapes. Download data pages and product-specific literature. Request samples for evaluation.

Or call with questions: 1-800-362-3550

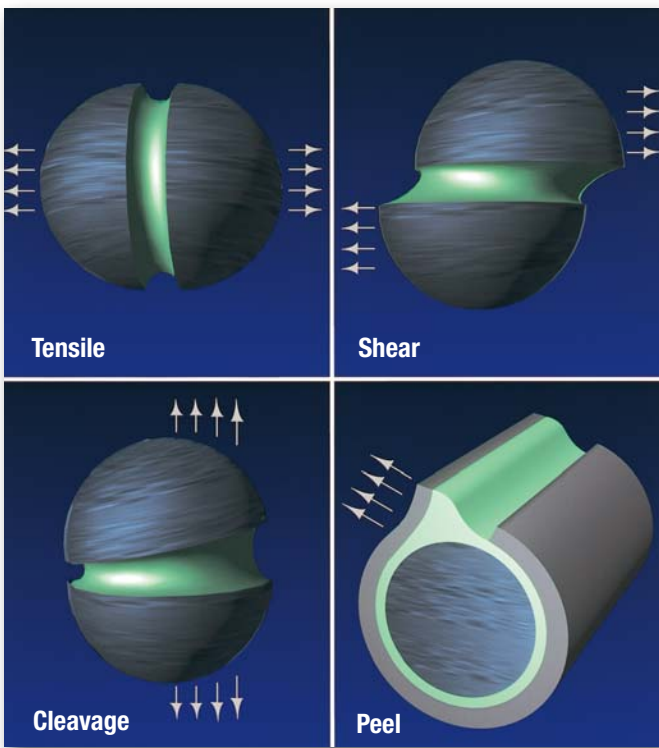
# Knowing when to use 3M™ Adhesives and Tapes to improve your product and process

Based on your answers to the following questions, you can decide if it will be worth your time to evaluate specific 3M adhesives and tapes for your operation.

**Q** *Can adhesives hold together the materials you want to join with the strength you need?*

Some materials are harder to bond than others. But with 3M adhesive and tape technologies, even many materials once defined as “hard-to-bond,” such as low surface energy plastics, can be bonded with strength greater than the materials bonded. The list of potential substrates ranges from glass, wood, cardboard, and rubber to steel, concrete, foam, polycarbonate, and just about any other material you can name.

Strength can be readily matched to the substrate and stress characteristics to which the bond will be subjected. Most adhesives and tapes perform better when the primary stress is tensile or shear. In most industrial applications, however, a combination of stresses are involved that may include cleavage and peel.



Tensile is pull exerted equally over the entire joint. Pull direction is straight and away from the adhesive bond.

Shear is pull directed across the adhesive, forcing the substrates to slide over each other.

Cleavage is pull concentrated at one edge of the joint, exerting a prying force on the bond. The other edge of the joint is theoretically under zero stress.

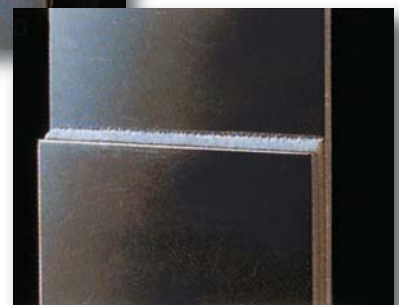
Peel is concentrated along a thin line at the edge of the bond where one substrate is flexible. The line is the exact point where an adhesive would separate if the flexible surface were peeled away from its mating surface. Once peeling has begun, the stress line stays out in front of the advancing bond separation.

**Q** *Do you want to eliminate the stress concentration caused by spot welds, rivets, screws, or other mechanical fasteners and maintain surface integrity?*

Adhesives distribute stress evenly over the entire bonded area. A rivet or screw hole in the substrate concentrates stress at the hole and can decrease physical properties of the substrate. With uniform stress distribution of adhesives and tapes, lighter, thinner materials can be used without concerns about distortion, splitting, or crazing at the mechanically fastened site. Elimination of holes in metal also reduces the chances for rust and corrosion.



2



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**Q** *Would invisible fastening improve your products appearance?*

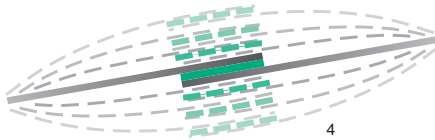
3M adhesives and tapes are generally hidden between the bonded substrates. Surfaces stay smooth and clean for a more attractive appearance and less surface refinishing.

**Q** *Do you want to attach dissimilar substrates?*

Laminates of dissimilar materials can often produce combinations superior in strength and performance to either substrate alone. The flexibility of many 3M adhesives and tapes compensates for differences in the coefficients of expansion between such materials as aluminum and wood.

**Q** *Will your part be subjected to vibration?*

The viscoelasticity of many 3M adhesives and tapes improves resistance to vibration fatigue by imparting flexibility to a joint or bonded area.



**Q** *Is the design of your part right for adhesive bonding?*

Adhesives perform better with some part configurations than with others. With the variety of 3M adhesive forms such as pastes, aerosol sprays, and tapes, you should be able to find an adhesive to meet the requirements of most parts that can be assembled with mechanical or fusion fastening. A spray adhesive would be effective, for example, to cover foam cushioning, but would not be a consideration for a part with a narrow bonding area. For cleaner, more efficient application, die-cut pressure sensitive adhesive foam tape can be precisely placed on smaller, irregularly-shaped bonding surfaces.

**Q** *Do you want to bond and simultaneously seal between the substrates?*

With many adhesives and tapes, continuous contact between mating surfaces effectively bonds and seals against dirt, dust, water, and other environmental conditions.

Adhesives and tapes also provide a film barrier to reduce or prevent bimetallic corrosion that often occurs in bonding two different types of metal.

**Q** *Will your finished assembly be exposed to harsh environmental conditions?*

Some adhesives do not hold well when exposed to very low or very high temperatures, high humidity, chemicals, or even water. Other adhesives are specially formulated to resist harsh environments.

**Q** *Do you need high speed bonding?*

In some instances, adhesive bonding can be slow and require critical processing. Some epoxies, for example, require heat, pressure and fixturing to bond metal to metal in structural strength assemblies. With the wide range of 3M adhesives and tapes, however, a variety of open times are available. Depending on your end use requirements, you can select 3M pressure sensitive adhesives that bond on contact or a 3M two-part paste adhesive with open times ranging from 2 to 90 minutes. Repositionable formulations are also available for repeated openings and closings.

**Q** *Does your part need to be disassembled for maintenance or service?*

When assembled with most adhesives or tapes, parts are generally difficult or virtually impossible to disassemble without damaging the part. As an exception, hot melt adhesives can be reheated and reused, but in most instances reuse would be messy and impractical. As already noted, repositionable adhesives are available, but application is restricted to lighter duty attachment or closure. Reclosable fasteners are a hybrid technology using mechanical fastening and pressure sensitive adhesive. The adhesive permanently bonds two reclosable mating strips to the substrates that need to be opened and closed. See pages 85 through 91 for details.

**Q** *Do you want to cut costs, increase production and simplify your operation?*

With 3M adhesives and tapes, you can see cost reduction through reduced material requirements, weight reductions, and elimination of drilling, welding, screwing, finishing, and similar operations. In most cases, adhesives require minimal training. And many adhesives require little or no investment in major equipment.

# 3M™ Adhesive and Tape classifications – you really can't say “glue” any more

At one time, adhesive and glue were used synonymously. In industry today, however, designers and engineers are using terms like two-part low-odor acrylic, high bond tape, PUR systems, cyanoacrylate, and more. Glue is now considered to be something sticky which is no longer a characteristic of many adhesives.

3M adhesives can be classified in several ways.

## Classify by form

3M adhesives are available as liquids, pastes, tapes, films, and shaped solids. Each has characteristics to be considered for application effectiveness and efficiency.

Liquids and pastes readily fill voids to enhance mechanical adhesion. Many liquids can be sprayed to cover large areas.

Films and pressure sensitive tapes offer advantages unique to their form:

- Uniform thickness throughout the joint.
- Confinement of the adhesive to the immediate bonding area.
- Clean bonding without dripping or overflow.
- Minimum adhesive waste.
- Die-cut into complex shapes to facilitate bonding of complex parts or parts with narrow bonding surfaces.

Hot melts are supplied as solid sticks, cartridges, pellets, or similar shapes. Handling and storage is easy and neat.

## Classify by strength

Another classification for industrial applications is by relative strength and solidification process. Generally, those adhesives that bond through a chemical reaction are stronger than those that bond through a physical change.

### Structural adhesives bond by chemical reaction.

3M™ Structural Strength Adhesives bond the load-bearing parts of a product. As a rule of thumb, structural strength adhesives reach a minimum of 1,000 psi overlap shear strength. 3M formulations include the following:

- *Epoxy adhesives* are available in one and two-part liquids and pastes. Of all 3M adhesives, these provide the highest strength and elevated temperature resistance.
- *Acrylic adhesives* are two-part liquids and pastes to bond the widest variety of substrates including hard-to-bond plastics and oily metals. The distinction is high strength bonding without the surface preparation needed for epoxies and urethanes.
- *Urethane adhesives* are generally lower cost two-part liquids and pastes that cure quickly to an elastic bond in applications requiring flexibility between dissimilar materials. Impact resistance is a distinctive characteristic.
- *Cyanoacrylate adhesives* are high strength liquid formulations known as instant adhesives. On rigid plastic, glass, metal, rubber, and other low porosity substrates, they harden in seconds through reaction with surface moisture.

- *Anaerobic adhesives* are liquids that cure to a tough plastic in the absence of oxygen and in the presence of metal. Typical applications include threadlocking, retaining, gasketing, and sealing.

### Non-structural adhesives bond with a physical change.

Non-structural adhesives vary in strength from repositionable to strength equal to or greater than the strength of the substrate being bonded. These adhesives are typically less than 1000 psi and bond materials in cushions, gaskets, insulation, veneers, and general assembly. 3M formulations include the following:

- *Hot melt adhesives* melt and flow under heat to wet the substrates and make bonds quickly upon cooling. Products are available with a variety of characteristics such as short set times, sprayable formulas, and permanent PSA properties. Applications range from sealing to bonding automotive interior trim.
- *Rubber adhesives* are solvent-based or water-based and solidify through evaporation of the carrier. Products are designed for adhesion to various substrates, application methods, and environmental resistance of the bonded product.
- *Contact bond adhesives* are usually rolled, brushed, or sprayed on the two surfaces to be mated and permitted to become dry to the touch with a variety of open times. When the surfaces are pressed together, near ultimate bond strength is achieved.

### Pressure sensitive adhesives

*Pressure sensitive adhesives* (PSAs) found in 3M tapes grip immediately to mating surfaces. With dwell time, the adhesive conforms to surface irregularities.

### 3M hybrid classifications

- *Curing hot melts (Polyurethane Reactive [PUR] adhesives)* are moisture-curing urethanes that apply like a hot melt adhesive but cool to bond strength usually associated with two-part structural adhesives.
- *Reclosable fasteners* combine adhesive and mechanical fastening principles. Pressure sensitive adhesive permanently bonds two reclosable mating strips to the substrates that need to be opened and closed multiple times.

# Substrates and adhesion – a surface phenomenon, so know surfaces well

Adhesives attach to the surfaces of two substrates, unlike a process that fuses substrates into a unified whole such as welding metal or solvent activation of plastics. In selecting a 3M adhesive or tape, surface condition must be considered: roughness, smoothness, porosity, coated, uncoated, cleanliness, flexibility, size of the part, and surface energy of the part.

Adhesive paste, for example, flows readily into a rough surface for improved effective adhesion. Flexible materials such as paper or thin gauge metal can be bonded with a thin adhesive transfer tape. Large rigid parts with smooth clean surfaces can be bonded with a variety of 3M products ranging from double coated foam tapes to two-part structural adhesives. Some plastics have plasticizers which migrate to the surface and degrade the bond over time, so a plasticizer-resistant adhesive or tape is essential. If the substrate has been powder coat painted, the coating is the bonding surface rather than the substrate, and you would want to consider a 3M tape or adhesive developed specifically for that surface.

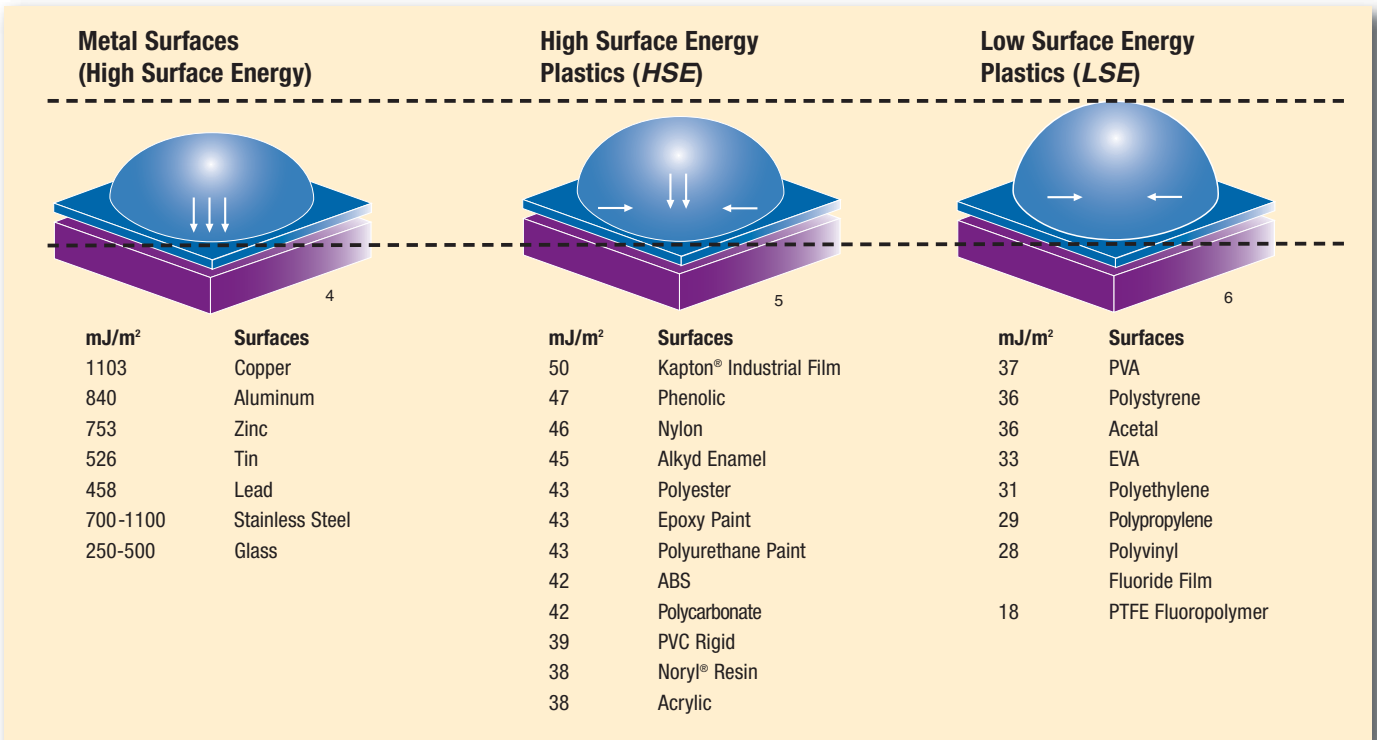
Surface energy ranges from high to low. To illustrate the concept of

surface energy, think of water on the unwaxed hood of a car. The unwaxed hood has high surface energy and water on the hood flows into puddles. In comparison, a waxed hood has low surface energy and the water beads up rather than flows out. Similar to water, adhesive on a high surface energy surface flows and “wets out” the surface. “Wetting out” is required to form a strong bond.

*As a rule of thumb, the higher the surface energy, the greater the strength of adhesion.*

Specially formulated adhesives are available for low surface energy surfaces. The following illustrations and surface rankings give you an idea of relative surface energy.

Regardless of surface energy, the substrate must be unified, dry, and clean to maximize adhesive contact.



Note: These values are provided as a guide. Formulation modifications can substantially alter surface energies.

# Adhesive economics

In considering cost, consider more than just the cost per gallon or roll. The true value of a 3M adhesive or tape is determined by applied cost per unit. This includes adhesive coverage and the time and labor to apply it. Coverage is usually expressed in terms of adhesive thickness or weight.

For a true cost picture, there are a number of facts and questions to consider; questions not only about the adhesive itself, but also substrates, application methods, and more.

**Q** *Has a realistic acceptance test conclusively screened out a lower cost bonding solution?*

A common error is excessive or meaningless test standards that might rule out satisfactory products. Use the lowest cost adhesive consistent with end use performance.

**Q** *Has a minimum coverage been determined that consistently meets performance requirements?*

100% adhesive coverage is not always necessary. 50% may be completely satisfactory. Or even a single bead of adhesive or strip of high strength tape.

**Q** *Have all physical properties of the substrate been considered?*

High absorption materials, for example, soak up low viscosity adhesives and need multiple coats. In that case, a higher viscosity product or spraying is needed.

**Q** *Does the adhesive require special ventilation or safety equipment?*

Many adhesives are now low or no VOC's, or 100% solids, and require little or no special ventilation equipment. PSA tapes in application are solventless.

**Q** *Can the adhesive or tape be applied with low cost equipment, or even no equipment?*

Equipment needs only be consistent with the desired production rate. A collapsible squeeze tube may be all that's necessary to bond plastic parts. Tape can be simply rolled on by hand. If more demanding equipment is needed for the application, 3M technical service will work with you to evaluate processes and equipment.



7



8

**Q** *Is the adhesive or tape easy to use to save training time?*

The level of training will vary. A one-part structural adhesive will require a more skilled operator than is necessary to seal a carton with a hot melt adhesive.

**Q** *Does the adhesive or tape give the engineer greater flexibility in design and materials?*

Less expensive substrates and simplified designs can reduce overall cost and increase the market appeal of the end product.

An evaluation of your answers will indicate an appropriate selection of adhesives for the job and true cost. The final adhesive selection will be based on a comparison between applied cost per unit and specific required performance.



# 3M™ Structural Adhesives



With high cohesive strength, each 3M™ Structural Adhesive bonds high strength materials and potentially replaces mechanical fasteners and welds. Depending on the adhesive, you can bond metals, wood, rubber, ceramic, composites, engineering grade plastics, glass, and more.

Industries worldwide take advantage of the wide selection of adhesives and innovative dispensing for many applications, for example: bushing assembly in appliances, headlight assembly in cars, relays and controls in electronic equipment, lawn sprinklers, office partitions, pump casting components, golf clubs, and home furniture.

Products include the following:

- 3M™ Scotch-Weld™ Epoxy, Acrylic, and Urethane Adhesives
- 3M™ Scotch-Weld™ Instant Adhesives
- Rite-Lok™ Cyanoacrylate Adhesives
- Rite-Lok™ Anaerobic Adhesives
- 3M™ Scotch-Weld™ Polyurethane Reactive (PUR) Adhesive Systems

# 3M™ Scotch-Weld™ Epoxy, Acrylic, and Urethane Adhesives

## Load-bearing formulations for metals, rubber, glass and more

As an alternative to mechanical or fusion fastening, the reasons for 3M™ Scotch-Weld™ Epoxy, Acrylic and Urethane Adhesives are many: greater design latitude, cleaner lines, material substitution, less machining, lighter weight, more durability, and often less cost.

To meet application and end-use requirements, there are formulations for bonding steel, aluminum, copper, low surface energy plastics, rubber, glass, wood, masonry and more. Depending on adhesive, select from duo-pak cartridges, cans, tubes, pails, and drums.

Whatever properties you need – durable adhesion, flexibility, creep resistance, heat and environmental resistance, or void-filling – you'll likely find a 3M™ Scotch-Weld™ Structural Adhesive to meet your requirements and expectations.



With handling strength in 2 hours and full cure in 24 hours, 3M™ Scotch-Weld™ Epoxy Adhesive DP420 bonds the shaft into the head of a golf club. Flexibility of the toughened two-part formulation helps absorb repeated impact for a secure bond. Available in 37ml, 200ml and 400ml duo-pak cartridges for use with any of the convenient hand-held 3M™ EPX™ Applicators.

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With a 400ml cartridge, the 3M™ EPX™ Pneumatic Applicator applies 3M™ Scotch-Weld™ Epoxy Adhesive DP420 to bond ABS components of an automotive breather valve. The toughened epoxy at the inlet port seals in the high pressure and air/fuel mixture.

19



With no surface preparation, 3M™ Scotch-Weld™ Structural Acrylic Adhesive DP8005 bonds the mitered corners of a simulated-wood composite plastic P.O.P. display, eliminating nails that would compromise appearance.

17



3M™ Scotch-Weld™ Low Odor Acrylic Adhesive DP810 requires minimal surface preparation for bonding metal hinges into awning frames. Reaches handling strength in only 10 minutes.

18



Brush-applied 3M™ Scotch-Weld™ Epoxy Adhesive 2216 B/A provides a tough, flexible bond between honeycomb and the framework in entry step panels of commuter aircraft.

20



3M™ Scotch-Weld™ Epoxy Adhesive DP420 bonds steel couplings into aluminum tubing of a bicycle frame. Couplings are threaded for easy assembly and disassembly.

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### 3M™ Scotch-Weld™ Structural Adhesives in Duo-Pak Cartridges and Bulk

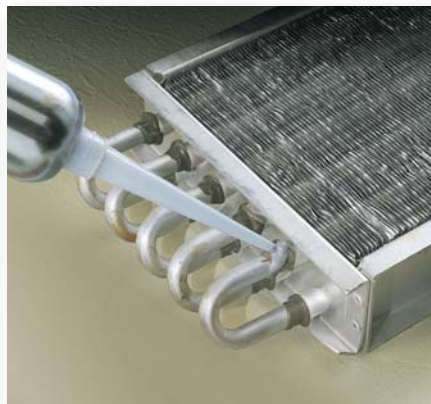
Product (Color)	Key Features	Mix Ratio (Volume) B:A	Approximate Viscosity 75°F (24°C) (cps)	Approximate Mixed Worklife at 75°F (24°C)	Approximate Time to Handling Strength at 75°F (24°C)	Average T-Peel at 75°F (24°C) (piw)	Overlap Shear (psi)		
							-67°F (-55°C)	75°F (24°C)	180°F (82°C)
DP100 (Clear)	General Purpose Rigid bonds	1:1	13,000	5 minutes	20 minutes	2	900	1,500	300
DP100 Plus (Clear)	Very flexible Colorless	1:1	8,500	4 minutes	20 minutes	10	3,000	3,500	200
DP100NS (Translucent)	General Purpose Non-sag	1:1	95,000	5 minutes	20 minutes	2	900	1,500	300
DP100FR (White)	Flame Retardant UL94 V-0 rating	1:1	80,000	6 minutes	20 minutes	2	1,250	2,200	800
DP105 (Clear)	Very flexible Colorless	1:1	6,500	5 minutes	20 minutes	35	3,500	2,000	150
DP110 (Gray)	General Purpose Flexible bonds	1:1	55,000	8 minutes	20 minutes	20	2,700	3,500	250
DP110 (Translucent)	General Purpose Flexible bonds	1:1	50,000	8 minutes	20 minutes	20	2,500	2,500	200
DP125 (Gray)	High Performance Very flexible bonds	1:1	52,500	25 minutes	2.5 hours	35	3,400	4,300	400
DP125 (Translucent)	High Performance Very flexible bonds	1:1	15,000	25 minutes	2.5 hours	35	4,000	2,500	150
DP190 (Gray)	High Performance Flexible bonds	1:1	80,000	90 minutes	10 hours	20	1,500	2,500	400
DP190 (Translucent)	High Performance Flexible bonds	1:1	10,000	80 minutes	6 hours	20	3,500	1,200	150
DP270 (Black, Clear)	Rigid potting compound Non-corrosive	1:1	12,000	60 minutes	3 hours	2	1,200	2,500	300
DP420 (Off-White)	Tough durable bonds High impact resistance	2:1	30,000	20 minutes	2 hours	50	4,500	4,500	450
DP420 (Black)	Tough durable bonds High impact resistance	2:1	30,000	20 minutes	2 hours	50	4,500	4,500	1,250
DP420NS (Black)	Tough durable bonds Non-sag	2:1	180,000	20 minutes	2 hours	50	4,500	4,500	1,250
DP460 (Off-White)	Tough durable bonds High impact resistance	2:1	30,000	60 minutes	4 hours	60	4,500	4,500	700
DP460NS (Off-White)	Tough durable bonds Non-sag	2:1	125,000	60 minutes	4 hours	60	4,900	4,650	1,350
EC2216* (Gray)	High Performance Very flexible bonds	2:3	80,000	90 minutes	10 hours	25	3,000	3,200	400

Note: The technical information and data on these pages should be considered representative or typical only and should not be used for specification purposes.

\* Available in Duo-Pak Cartridges only.



3M™ Concrete Repair DP600 Self-Leveling sets quickly to anchor bolts.



3M™ Scotch-Weld™ Epoxy Adhesive 2214 bonds and seals refrigerant coils with overlap shear strength of 4500 psi. One part eliminates metering and mixing.



3M™ Scotch-Weld™ Structural Adhesive EC2216 bonds honeycomb to aluminum for common applications in aerospace and transportation.

3M™ Scotch-Weld™ Structural Adhesives in Duo-Pak Cartridges and Bulk (cont.)

	Product (Color)	Key Features	Mix Ratio (Volume) B:A	Approximate Viscosity 75°F (24°C) (cps)	Approximate Mixed Worklife at 75°F (24°C)	Approximate Time to Handling Strength at 75°F (24°C)	Average T-Peel at 75°F (24°C) (piw)	Overlap Shear (psi)		
								-67°F (-55°C)	75°F (24°C)	180°F (82°C)
Urethane	DP600 (Gray)	Concrete repair Self-leveling	1:1	6,000	1 minute	4 minutes	–	–	3,580	–
	DP600NS (Gray)	Concrete repair Non-sag	1:1	Paste	1 minute	2 minutes	–	–	2,300	–
	DP601 (Gray)	Flexible Self-leveling	1:1	6,000	1 minute	4 minutes	–	–	2,300	–
	DP601NS (Gray)	Flexible Non-sag	1:1	Paste	1 minute	2 minutes	–	–	2,300	–
	DP604NS (Black)	Flexible Non-sag	1:1	Paste	4 minutes	20 minutes	–	–	900	–
	DP605NS (Off-White)	Semi-rigid Non-sag	1:1	150,000	5 minutes	20 minutes	–	–	1,250	–
	DP608 (Black)	Flexible Non-sag	1:1	Paste	10 minutes	90 minutes	–	–	2,000	–
	DP620NS (Black)	Flexible Non-sag	1:1	Paste	20 minutes	4 hours	–	–	2,500	–
	DP640* (Brown)	Tough flexible bonds Non-sag	1:1	25,000	40 minutes	8 hours	–	–	2,000	–
	DP5001 (Black)	Flexible Conveyor belt repair	1:1	100,000	1 minute	15 minutes	–	–	600	–
	DP5003 (Black)	Non-sag Vertical applications	1:1	Paste	3 minutes	60 minutes	–	–	500	–
	DP5105 (Gray)	Low temperature flexibility Expansion joint seals	1:1	32,000	5 minutes	9 hours	–	–	150	–
	DP5106 (Gray)	High strength Control joint seals	1:1	34,000	4 minutes	40 minutes	–	–	1,100	–
Acrylic	DP805 (Lt. Yellow)	Fast strength build-up Minimal surface prep	1:1	110,000	3 minutes	10 minutes	35	2,500	3,500	2,200
	DP807 (Lt. Yellow)	Fast strength build-up Minimal surface prep	1:1	50,000	5 minutes	10 minutes	20	–	2,500	–
	DP810 (Tan, Black)	Tough durable bonds High impact resistance	1:1	20,000	10 minutes	20 minutes	30	1,200	3,600	500
	DP8010NS (Off-White)	Bonds polyolefins and low surface energy materials	10:1	65,000	10 minutes	2 hours	30	–	2,400	400
	DP812 (Lt. Yellow)	Fast strength build-up Minimal surface prep	1:1	50,000	10 minutes	20 minutes	20	–	2,500	–
	DP810NS (Tan)	Tough durable bonds Non-sag	1:1	95,000	10 minutes	20 minutes	20	1,200	4,000	500
	DP820* (Lt. Yellow)	Medium work life Minimal surface prep	1:1	55,000	15 minutes	40 minutes	20	3,100	3,150	1900
	DP825 (Lt. Yellow to Lt. Amber)	Medium worklife Minimal surface prep	1:1	50,000	25 minutes	40 minutes	20	–	2,500	–
	DP8005 (Off-White, Black)	Bonds polyolefins and low surface energy materials	10:1	25,000	3 minutes	3 hours	17	–	2,400	300
DP8010 (Off-White)	Bonds polyolefins and low surface energy materials	10:1	20,000	10 minutes	2 hours	35	–	1,800	400	

\* Available in Duo-Pak Cartridge only.

Rite-Lok™ 2-Step Structural Acrylic Adhesives\*

Step 1: apply adhesive to one surface. Step 2: apply activator to second surface and reach handling strength in 3-5 minutes.

Product	Typical Use	Color	Chemical Type	Typical Viscosity (cps)	Temp Range	Time to Handling	Full Cure (hours)	Activator	Size
SA24	Impact resistant for a wide variety of dissimilar substrates	Amber	Acrylic	15,000	-65° to 275°F (-54° to 135°C)	3 min.	24	AC380D	50 ml btl.
SA30	High viscosity with superior peel and impact strength	Straw		22,000	-65° to 250°F (-54° to 121°C)	5 min.			300 gram cartridge
AC380D	Structural adhesive activator; solventless, non-flammable for use with SA24 or SA30								2 fl. oz. btl.

Note: The technical information and data should be considered representative only and should not be used for specification purposes.

\* Other Rite-Lok™ Products on pages 16-21.

### 3M™ Scotch-Weld™ Two-Part Structural Adhesives

	Product (Color)	Key Features	Mix Ratio (Volume) B:A	Approximate Viscosity 75°F (24°C) (cps)	Approximate Mixed Worklife at 75°F (24°C)	Approximate Time to Handling Strength at 75°F (24°C)	Average T-Peel at 75°F (24°C) (piw)	Overlap Shear (psi)		
								-67°F (-55°C)	75°F (24°C)	180°F (82°C)
Epoxy	1751 B/A (Gray)	Excellent void filler Rigid bonds	3:2	700,000	45 minutes	10 hours	4	1,400	2,000	500
	1838 B/A (Green)	Multi-purpose Rigid bonds	4:5	400,000	60 minutes	8 hours	4	1,500	3,000	500
	1838 B/A (Tan)	Multi-purpose Rigid bonds	5:6	250,000	60 minutes	8 hours	4	1,500	2,000	500
	1838L B/A (Translucent)	Multi-purpose Rigid bonds	1:1	10,000	60 minutes	8 hours	4	2,000	2,500	300
	2158 B/A (Gray)	Multi-purpose Rigid bonds	1:1	375,000	2 hours	10 hours	3	1,500	2,000	400
	2216 B/A (Gray)	High performance Very flexible bonds	2:3	80,000	90 minutes	10 hours	25	3,000	3,200	400
	2216 B/A (Translucent)	General purpose Very flexible bonds	1:1	10,000	2 hours	14 hours	25	3,000	1,700	140
	2216 B/A NS (Tan)	High performance Non-sag	2:3	350,000	2 hours	10 hours	25	2,000	2,500	400
	3501 B/A (Gray)	Multi-purpose Rigid bonds	1:1	500,000	7 minutes	25 minutes	4	1,500	2,400	300
	Fast Set Wood	Low viscosity with short time to handling strength	1:1	12,000	4 minutes	20 minutes	–	–	–	–
	Fast Set Non-Sag Wood	High viscosity with short time to handling strength	1:1	95,000	4 minutes	20 minutes	–	–	–	–
	Medium Set Wood	Low viscosity with longer time to handling strength	1:1	10,000	45 minutes	8 hours	–	–	–	–
Urethane	3532 B/A (Brown)	Multi-purpose Semi-rigid bonds	1:1	30,000	10 minutes	90 minutes	25	2,500	2,000	300
	3535 B/A (Off-White)	Multi-purpose Semi-rigid bonds	1:1	30,000	3 minutes	30 minutes	25	2,500	2,000	300
	3549 B/A (Brown)	Tough Flexible bonds Non-sag	1:1	30,000	60 minutes	8 hours	25	2,500	2,000	300

### 3M™ Scotch-Weld™ One-Part Epoxy Adhesives and Metal Primers

	Product (Color)	Key Features	Approximate Viscosity 75°F (24°C) (cps)	Cure Conditions			Average T-Peel at 75°F (24°C) (piw)	Overlap Shear (psi)			
				Time (min)	Temperature (°F/°C)	Pressure (psi)		-67°F (-55°C)	75°F (24°C)	180°F (82°C)	250°F (121°C)
Epoxy	1386 (Cream)	High temperature strength Impact resistance	150,000	60	350/177	10	10	3,000	5,500	4,500	2,500
	1469 (Cream)	High temperature strength Low viscosity	60,000	120	350/177	10	2	3,150	3,700	3,700	3,600
	2086 (Gray)	High temperature strength High viscosity	Paste	60	350/177	10	5	3,000	5,000	5,000	2,200
	2214 Regular (Gray)	High temperature strength Low temp curing	Paste	60	250/121	10	5	3,000	4,500	4,500	1,500
	2214 Hi-Density (Gray)	High temperature strength Deaerated, dense bonds	Paste	60	250/121	10	5	3,000	4,500	4,500	1,700
	2214 Hi-Temp Original (Gray)	High temperature strength and environmental resistance	Paste	60	250/121	10	2	2,000	2,000	3,000	2,500
	2214 Hi-Temp New Formula (Gray)	High temperature strength and environmental resistance	Paste	60	250/121	10	2	2,800	2,800	2,800	2,500
	2214 Non-Metallic Filled (Cream)	High temperature strength Higher insulation value	Paste	60	250/121	10	7	3,000	4,000	4,500	1,500
	2290 (Amber)	Low solids liquid coating for metal laminations	60	30	350/177	50	10	5,000	5,000	3,500	1,200

	Product (Color)	Description	Viscosity (cps)	Comments
Primer	3901 (Red)	Adhesion promoter Organo-silane base Brush or spray	5	A primer for film and liquid adhesives for improved metal and glass adhesion or improved resistance to environmental exposure with epoxy and urethane adhesives. Protects cleaned surfaces until bonding can be completed. Imparts improved corrosion protection to metal.

Note: The technical information and data on these pages should be considered representative or typical only and should not be used for specification purposes.

## 3M™ EPX Applicators for Duo-Pak Cartridges

For low volume applications and take-it-to-the-job convenience, the 3M™ EPX Plus II and EPX metal manual applicators comfortably dispense any of the many 3M™ Scotch-Weld™ Duo-Pak Structural Adhesives.

For higher volume, select the 200ml manual dispenser or the 200ml or 400ml pneumatic dispenser.

For concrete repair, you also have manual or pneumatic options.

### Manual Applicators



25

EPX Plus II Applicator  
35ml with 10:1 plunger  
37ml with 2:1 plunger included  
50ml with 1:1 plunger included



26

EPX Metal Applicator  
with 2:1 plunger included



27

EPX 200ml Applicator  
with 2:1 and 1:1 plunger included



28

Concrete repair 12-ounce  
cartridge applicator

### Pneumatic Applicators



29

EPX 50ml Applicator  
for 50ml 1:1 and for 37ml 2:1 low  
viscosity products



30

EPX 200ml Applicator  
for 200ml 1:1 and 2:1, and 250ml  
10:1 (conversion kit)



31

EPX 400ml Applicator  
for 1:1 and 2:1



32

Concrete repair 12-ounce cartridge  
applicator

## 3M™ Nozzles for EPX Applicators and Duo-Pak Cartridges

Choose either the square gold or helical nozzle.

With the unique chambered design of the square gold, the two parts of the adhesive cascade through the nozzle with just low pressure to mix and apply even higher viscosity adhesives.

The helical design is your choice whenever you want extended reach for convenience and access.



33

Helical 35ml 10:1  
and 250ml 10:1



34

Helical and  
square gold 37ml  
2:1, 50ml 1:1,  
and 43ml 2:1



35

Helical and square  
gold 200/400ml  
1:1 and 2:1



36

Concrete repair  
helical



37

Concrete repair  
square for 8.4 oz.  
cartridge



38

3M™ EPX Nozzles simultaneously mix, meter, and dispense 3M™ Scotch-Weld™ 2-Part Adhesives or Concrete Repair from Duo-Pak cartridges. Extended reach helical nozzle is shown here bonding ABS components of a pump housing.

# 3M™ Scotch-Weld™ Instant Adhesives

## Fast bonding combinations of strength, cure time, and viscosity

For speed and performance, you'll likely find a product in this line with precisely the right combination of bond strength, cure time and viscosity.

These one-part cyanoacrylate adhesives rapidly reach handling strength at room temperature without a catalyst. On many applications, bonds reach handling strength in 5-10 seconds and 80% of full strength in an hour. A single drop per square inch can bond many plastics, rubber, metals and more with tensile strength up to 5,000 psi.



3M™ Scotch-Weld™ CA40 Instant Adhesive works on many problem surfaces where other adhesives may fail, such as EPDM rubber.



For wood and veneer repair, 3M™ Scotch-Weld™ Instant Adhesive CA40H is a high viscosity liquid for a fast void-filling bond.

## 3M™ Scotch-Weld™ Instant Adhesives

Product	Description	Base	Time <sup>(1)</sup> To Handling Strength (Sec.)	Viscosity (cps)	Average <sup>(2)</sup> T-Peel At 75°F (24°C) (PIW)	Overlap Shear Strength <sup>(3)</sup> @ 75°F (24°C) (PSI)					
						Steel	Alumi- num	Nitrile Rubber	Neoprene Rubber	ABS	Rigid PVC
CA4	<ul style="list-style-type: none"> <li>Fast setting for a variety of plastics and rubbers</li> </ul>	ethyl	5-40	150	1-2	2300	2800	35*	55*	800*	800*
CA5	<ul style="list-style-type: none"> <li>Higher viscosity, slower setting version of CA4 for filling gaps</li> <li>Meets CID A-A-3097, Type II, Class 3</li> </ul>	ethyl	15-60	2000	1-2	2500	650	35*	55*	800*	800*
CA7	<ul style="list-style-type: none"> <li>Very fast setting • Excellent adhesion to metals, plastics, and rubbers</li> </ul>	methyl	1-30	15-40	2-4	2500	2400	35*	55*	900*	1000*
CA8	<ul style="list-style-type: none"> <li>Slower setting than CA7 • Excellent adhesion to metals, plastics and rubbers</li> <li>Meets CID A-A-3097, Type II, Class 2</li> </ul>	ethyl	5-40	70-130	2-4	2000	2100	35*	55*	900*	1000*
CA9	<ul style="list-style-type: none"> <li>Slower setting version of CA8 for wire tacking and coil terminating</li> <li>Meets CID A-A-3097, Type II, Class 3</li> </ul>	ethyl	20-70	1000-1700	2-4	2000	2400	35*	55*	900*	1000*
CA40	<ul style="list-style-type: none"> <li>Very fast setting • Excellent adhesion to many substrates including flexible vinyl and EPDM rubber</li> </ul>	ethyl	3-20	20	1-2	1700	2600	35*	55*	800*	800*
CA40H	<ul style="list-style-type: none"> <li>Higher viscosity version of CA40</li> <li>Better void filling capabilities</li> </ul>	ethyl	5-40	400-600	1-2	1500	1500	35*	55*	900*	1000*
CA50 Gel	<ul style="list-style-type: none"> <li>High-viscosity, non-sag gel</li> <li>Less sensitive to acidic surfaces</li> </ul>	ethyl	60-120	45,000-85,000	1-2	2000	900	105*	130*	800*	600*
CA100	<ul style="list-style-type: none"> <li>High peel and impact strength</li> <li>High thermal shock and heat resistance</li> </ul>	ethyl	20-70	2500-4500	15	2000	2900	95*	120*	600*	700*
Thin Instant Wood Adhesive	<ul style="list-style-type: none"> <li>Very fast handling strength for general furniture, cabinet, and veneer assembly</li> </ul>	—	5	10	—	1550	1700	—	—	—	—
Medium Instant Wood Adhesive	<ul style="list-style-type: none"> <li>Short time to handling strength with some gap filling</li> </ul>	—	10	450	—	2850	1950	—	—	—	—
Thick Instant Wood Adhesive	<ul style="list-style-type: none"> <li>Longer time to handling strength with additional gap filling</li> <li>Some repositionability of parts on porous surfaces</li> </ul>	—	60	2250	—	2850	2700	—	—	—	—
Surface Activator	<ul style="list-style-type: none"> <li>Clear, colorless organic-based liquid helps speed curing and prime surfaces</li> <li>Comes with brush and spray pump</li> </ul>	—	—	—	—	—	—	—	—	—	—

(1) The time it takes assembled parts to reach a strength where further handling and processing can take place. Times will depend on surface to be bonded, temperature and humidity.

(2) Tested per ASTM D 1876-61T.

(3) Tested per ASTM D 1002-64.

\* Substrate failure.

Note: The technical information and data on these pages should be considered representative or typical only and should not be used for specification purposes.

## Rite-Lok™ Cyanoacrylate Adhesives

### Choices for instant performance and productivity...flexible bond line, low bloom, low odor, more

Known as instant adhesives, Rite-Lok™ Cyanoacrylate Adhesives offer more than a range of seconds-fast bonding for substrates ranging from metal to plastic, wood to rubber. These liquid and gel formulations give you a wide selection of other properties to help improve production and end use:

- Super fast curing
- Low odor
- Low blooming
- High temperature resistance
- Rubber-toughened for impact resistance
- Flexible to resist vibration
- Engineered grade for hard-to-bond plastics and rubbers
- Optimized metal bonding
- Bonding insensitive surfaces
- Gap filling



With a unique polymer, rubber-toughened Rite-Lok™ Cyanoacrylate Adhesives cure to a flexible bond line between dissimilar materials to maximize resistance to impact, peel, and thermal recycling. Choose low viscosity for close-fitting parts or high viscosity for gap filling.



For visual appeal, Rite-Lok™ Cyanoacrylate Adhesive LO100 is a low blooming formulation that bonds the plastic riser into a lipstick casing without chlorosis (white residue at the joint). Low odor reduces the need for sophisticated ventilation equipment.



To speed production and reliably assemble plastic and rubber, super fast curing Rite-Lok™ Cyanoacrylate Adhesives reach handling strength in 3-30 seconds. Also bond EPDM and other hard-to-bond substrates with confidence.



For coil termination, high temperature Rite-Lok™ Cyanoacrylate Adhesive HT700 resists continuous temperature up to 223°F (106°C) and intermittent exposure as high as 250°F (121°C).



Consider one of the engineered grade Rite-Lok™ Cyanoacrylate Adhesives for productivity and performance in bonding difficult-to-bond plastics and rubbers to themselves or in combination with metals or composites.



With more than 30 Rite-Lok™ Cyanoacrylate Adhesives, you have choices for application success with surfaces that are dissimilar, porous, non-porous, rough, smooth, oily, clean, low surface energy, high energy, and more.



## Rite-Lok™ Cyanoacrylate Adhesives

Product	Typical Use	Color	Chemical Type	Typical Viscosity (cps)	Temperature Range	Time to Handling	Full Cure (hours)	Markets
<b>Super Fast Cyanoacrylate Adhesives</b>								
SF20	Optimum performance on wide range of rubber and plastic	Clear	Ethyl Hybrid	20	-65° to 180°F (-54° to 82°C)	3-30 sec.	24	Automotive, appliance, leather working, hand tools, electronics, power tools
SF100	Fast cure, high strength with EPDM and other elastomers			100		3-30 sec.		
<b>Low Odor Cyanoacrylate Adhesives</b>								
L05	Very low viscosity wicking grade	Clear	Methoxyethyl	5	-65° to 160°F (-54° to 71°C)	5-60 sec.	24	Cosmetic cases, appearance-critical applications, black substrates, close-up bonding
L0100	Low-medium viscosity for close fitting parts			100		10-60 sec.		
PR03	Medium-high viscosity for gap filling			1000		20-70 sec.		
<b>Rubber-Toughened Cyanoacrylate Adhesives</b>								
PR80	Low viscosity for close fitting parts	Black	Ethyl Hybrid	300	Continuous -65° to 200°F (-54° to 93°C) Intermittent -65° to 225°F (-54° to 107°C)	20-50 sec.	24	Automotive, appliance, electric motors, hand tools, electronics, power tools
PR10	High viscosity for gap filling			3500		20-90 sec.		
<b>Flexible Cyanoacrylate Adhesives</b>								
PR851	Medium viscosity with some gap filling	Clear	Ethyl Hybrid	300	-65° to 160°F (-54° to 71°C)	10-35 sec.	24	Automotive, appliance, hand tools, electronics, power tools
<b>High Temperature Cyanoacrylate Adhesives</b>								
HT40	Low viscosity for close fitting parts	Clear	Ethyl Hybrid	40	Continuous -65° to 223°F (-54° to 106°C) Intermittent -65° to 250°F (-54° to 121°C)	5-20 sec.	24	Appliance, electronics, electric motors, automotive, transformers
HT700	Medium viscosity with some gap filling			700		Same as HT40		
<b>Engineered Grade Cyanoacrylate Adhesives</b>								
PR5	Very low viscosity wicking grade for plastics/rubbers	Clear	Ethyl Hybrid	5	-65° to 180°F (-54° to 82°C)	1-10 sec.	24	Automotive, appliance, electronics, hand tools, power tools
PR40	Low viscosity for close fitting plastics/rubber parts			40		3-20 sec.		
SB14	General purpose, low viscosity plastic bonder			100		10-30 sec.		
PR600	Medium viscosity with some gap filling for plastics/rubbers			600		4-25 sec.		
SB16	General purpose, high viscosity for gap filling			1500		20-100 sec.		
PR54	Fast cure, gel viscosity for max gap filling			Gel		3-60 sec.		
PR600B	Black version of PR600			Black		600		

Note: The technical information and data on these pages should be considered representative or typical only and should not be used for specification purposes.

Rite-Lok™ Cyanoacrylate Adhesives (cont.)

Product	Typical Use	Color	Chemical Type	Typical Viscosity (cps)	Temperature Range	Time to Handling	Full Cure (hours)	Markets
<b>Metal Cyanoacrylate Adhesives</b>								
SB93	Low viscosity to penetrate between parts	Clear	Methyl	5	-65° to 180°F (-54° to 82°C)	15-35 sec.	24	Costume jewelry, treated metals, plated metals, metal working
SB30	Multi-purpose metal bonder			100		5-20 sec.		
<b>Surface Insensitive Cyanoacrylate Adhesives</b>								
SB20	Very low viscosity wicking grade	Clear	Ethyl Hybrid	2	-65° to 180°F (-54° to 82°C)	15-35 sec.	24	Woodworking, luggage and fabric, hobby, costume jewelry, leather
SB95	Low viscosity for close fitting parts			40		2-20 sec.		
SI100	Low-med viscosity for medium gaps			100		3-20 sec.		
SI1500	High viscosity for gap filling			1500		5-60 sec.		
SI2500	Very high viscosity for gap filling			2500		15-40 sec.		
SB09	Fast cure, gel viscosity for max gap filling			Gel		3-60 sec.		
<b>General Purpose Cyanoacrylate Adhesives</b>								
EC40	General purpose, fast curing	Clear	Ethyl	40	-65° to 180°F (-54° to 82°C)	10-30 sec.	24	Automotive, general bonding, consumer products, toys, rubber/plastic assembly
EC100	General purpose, fast curing			100		10-40 sec.		
EC600	Higher viscosity to reduce migration from bond area			600		5-60 sec.		
EC2500	Slow cure for porous material or gap filling			2500		20-60 sec.		
ECIGEL	Industrial strength thixotropic gel for maximum gap filling			Gel		45-180 sec.		
<b>Cyanoacrylate Primers, Activators, and Debonders</b>								
AC12	Cyanoacrylate accelerator with isopropyl alcohol formulation for insensitive plastics, cosmetically critical bond lines, and medical applications.							
AC68	Cyanoacrylate debonder for cleanup.							
AC77	Cyanoacrylate polyolefin primer for very fast bonding of difficult-to-bond polyethylene and polypropylene.							
AC78	Adhesion promoter for use with silicone, Santoprene®, Viton® and EPDM.							
AC79	California compliant version of AC78 (acetone based).							
AC113	Cyanoacrylate general purpose accelerator will not attack plastics.							
AC452	Cyanoacrylate acetone-based accelerator flashes off rapidly; excellent adhesion; overspray may attack some plastics.							

Note: The technical information and data should be considered representative only and should not be used for specification purposes.

**Rite-Lok™ 2-Step Structural Acrylic Adhesives on page 12.**

# Rite-Lok™ Anaerobic Adhesives

## The easy choice for running a tight operation

When you need secure tight fits and seals to keep production up and running, Rite-Lok™ Anaerobic Adhesives offer a wide selection of properties to help you save the time and cost of disruptive, unscheduled downtime due to leaks and loose fasteners.

For threadlocking, sealing, retaining, and gasketing, application is fast and easy with just a targeted squeeze of a bottle or tube. In the absence of oxygen and in the presence of metal, the anaerobic formulation cures quickly to a tough plastic that fills, seals, and secures.

**Rite-Lok™ Threadlockers** weld fasteners in place for blind holes and thru holes and prevent loosening from vibration.

**Rite-Lok™ Pipe Sealants** seal instantly to stop leaks when applied to the threads or compression fittings of most metal or certain plastic pipes.

**Rite-Lok™ Retaining Compounds** bond and seal non-threaded cylindrical assemblies.

**Rite-Lok™ Gasket Makers** fill voids between metal flanges and cure to a tight, rigid or flexible seal.



47

Rite-Lok™ Threadlockers on threaded metal fasteners help keep production equipment up and running. You save the cost and time of disruptive, unscheduled downtime due to nuts, bolts, and screws that vibrate loose in such areas as gear housings and motor mounts.



50

Rite-Lok™ Gasket Makers eliminate pre-cut or compression gaskets, or hold pre-cut gaskets in place during production. Seal without shimming effect or creeping.



48

Rite-Lok™ Threadlockers fill and seal threads completely to help stop corrosion, rust, and leaks. Securely hold even dissimilar metals.



49

Rite-Lok™ Retaining Compounds readily tighten tolerances in worn bearing seats, keyways, splines, tapers, shims, gears, and shafts. Fill voids completely to seal out moisture.



51

To save the cost of leaking fluid or gas, Rite-Lok™ Pipe Sealants cure quickly to a tight, continuous seal without the creep and shrinkage of pastes.



52

With a fast and easy squeeze, Rite-Lok™ Pipe Sealants eliminate the cost and problems of shredding tapes, O-rings, and other mechanical sealants.

**Rite-Lok™ Anaerobic Adhesives**

Product	Typical Use	Color	Typical Viscosity (cps)	Temperature Range	Time to Handling	Full Cure (hours)	Size
<b>Threadlocker Anaerobic Adhesives</b>							
TL22	Screwlock – Low removal torque for small fasteners less than a 1/4" (6mm) (HTR <sup>1</sup> )	Purple	1200	-65° to 300°F (-54° to 149°C)	< 20 min.	24	50, 250 ml btl.
TL42	Nutlock – Medium strength, general purpose (HTR <sup>1</sup> )	Blue	1200				1 ml pipette 10, 50, 250 ml btl. 1 liter pipette
TL43	Oil tolerant, medium strength general purpose (HTR <sup>1</sup> )	Blue	3300				10, 50, 250 ml btl.
TL62	Studlock – High strength with controlled torque tension (HHR <sup>2</sup> )	Red	1600				10, 50, 250 ml btl. 1, 14 liter btl.
TL71	Permanent studlock for bolts and studs up to 1" (25mm) (HHR <sup>2</sup> )		500			1 ml pipette 10, 50, 250 ml btl. 1, 14 liter btl.	
TL72	High temperature studlock with gap filling for larger diameter coarse threaded parts (HHR <sup>2</sup> )		7000	-65° to 450°F (-54° to 232°C)		10, 50, 250 ml btl. 1 liter btl.	
TL77	Heavy duty permanent for fasteners up to 1.5" (38mm) with coarse threads (HHR <sup>2</sup> )		7000	-65° to 300°F (-54° to 149°C)	< 60 min.	10, 50, 250 ml btl. 1, 14 liter btl.	
TL90	Penetrating adhesive for pre-assembled fasteners and porosity sealing of welds (HHR <sup>2</sup> )	Green	20	-65° to 300°F (-54° to 149°C)	< 20 min.		10, 50, 250 ml btl. 1 liter btl.
Product	Typical Use	Color	Typical Viscosity (cps)	Temperature Range	Time to Handling	Seal to Operating Pressure (hours)	Size
<b>Pipe Sealant Anaerobic Adhesives</b>							
HP45	High pressure sealant for all hydraulic and pneumatic fittings; will not clog valve or filters	Purple	14,000	-65° to 300°F (-54° to 149°C)	NA	4	1 ml pipette 50, 250 ml btl.
HP54	Refrigerant sealant with excellent chemical resistance	Red	2500				50, 250 ml btl.
HP69	High pressure sealant for all fine threaded hydraulic and pneumatic fittings	Brown	500				50, 250 ml btl.
PS65	General purpose for applications requiring easy disassembly	White	Paste				50 ml tube 250 ml btl.
PS67	Fast curing paste sealant for inactive surfaces such as stainless steel		Paste	-65° to 400°F (-54° to 204°C)			50 ml tube 250 ml btl.
PS92	High temperature for sealing tapered and parallel threaded components		Paste				50 ml tube 250 ml btl.
Product	Typical Use	Color	Typical Viscosity (cps)	Temperature Range	Time to Handling	Full Cure (hours)	Size
<b>Retaining Compound Anaerobic Adhesives</b>							
RT09	For tight tolerances and press fit augmentation	Green	125	-65° to 300°F (-54° to 149°C)	10-30 min.	24	10, 50, 250 ml tube
RT20	For assembly of automotive/marine cylinder liners and heat exchanger tubes		7000	-65° to 450°F (-54° to 232°C)	30-40 min.		10, 50, 250 ml tube
RT35	High strength for slip fits		2000	-65° to 300°F (-54° to 149°C)	10-60 min.		50, 250 ml btl.
RT40	Secures all types and sizes of bearings, shafts and cylindrical parts		600	-65° to 400°F (-54° to 204°C)	10-15 min.		50, 250 ml btl.
RT41	Medium strength for disassembly for service and bearing re-use	Tan	600	-65° to 300°F (-54° to 149°C)	15-20 min.		250 ml tube
RT60	High strength, high viscosity paste	Grey	Paste		10-30 min.		10 ml btl.
RT80	High strength, high viscosity to bond rigid assemblies	Green	1600		5-15 min.		10 ml btl.
RT142	Seal core plugs in engines for assembly or repair of loose fitting parts	Blue	10,000		5-15 min.		250 ml btl.

Note: The technical information and data should be considered representative only and should not be used for specification purposes.

<sup>1</sup> Hand tool for removal    <sup>2</sup> Heat and hand tool for removal

## Rite-Lok™ Anaerobic Adhesives

Product	Typical Use	Color	Typical Viscosity (cps)	Temperature Range	Cured Speed unprimed (primed)	Cured State	Size
<b>Gasket Maker Anaerobic Adhesives</b>							
GM04	Instant low pressure seal for gaps to .030"	Orange	Paste	-65° to 300°F (-54° to 149°C)	4-24 hours (30 min.-4 hrs)	Rigid	50 ml tube 250 ml tube
GM10	Making or dressing gaskets in rigid assemblies; can be screen printed; high temperature resistance	Red	Paste	-65° to 400° F (-54° to 204°C)	4-24 hours (30 min.-4 hrs)	Rigid	50 ml tube
GM15	General purpose; flexible to withstand vibration	Purple	Paste	-65° to 300°F (-54° to 149°C)	1-12 hours (15 min.-2 hrs)	Flexible	50, 250 ml tube 300 ml cartridge
GM18	Instant seal without a primer on mating aluminum flanges	Red	Paste	-65° to 300°F (-54° to 149°C)	4-24 hours (30 min.-4 hrs)	Flexible	50 ml tube 300 ml cartridge
Product	Typical use						Size
<b>Anaerobic Adhesives Primers</b>							
AC471	Fast-acting surface cleaner and primer for use with all anaerobic adhesives; seven day part life for pre-application						2 fl. oz. 1 gal. btl.
AC649	Acetone-based green primer for inactive or very cold surfaces; 30 day part life for pre-application						2, 8 fl. oz. 1 gal. btl.
3989	3M™ Scotch-Weld™ Anaerobic Activator to accelerate curing; dry time 30-60 seconds; solvent-based (flammable acetone)						4.5 fl. oz.

Note: The technical information and data should be considered representative only and should not be used for specification purposes.



# 3M™ Scotch-Weld™ Polyurethane Reactive (PUR) Adhesive Systems

## Dual power of speed and strength in the palm of your hand

Put a powerful production capability in your assembly operation.

### Production typical of hot melt adhesive

- **Fast set** and handling strength in as few as 5 seconds help eliminate or minimize fixturing to speed assembly
- **Low VOCs and 100% solids** eliminate drying and ventilation equipment and will not attack plastics
- **Choice of open times and viscosities** depending on the applicator and adhesive
- **One-component and moisture-curing** adhesives eliminate metering, mixing, and curing time and equipment

### Performance typical of structural adhesive

- **Greater than 1,000 lbs. holding strength within minutes** exceeds strength of conventional hot melt and PVA adhesives
- **Save finishing steps** with the elimination of nails and other mechanical fasteners in many applications



3M™ Scotch-Weld™ Polyurethane Reactive (PUR) Adhesive Systems with lower application temperature for heat sensitive substrates

3M™ Scotch-Weld™ Polyurethane Reactive (PUR) Easy 250 Adhesive Systems with higher application temperature for longer open time

With either applicator and the variety of 3M™ Scotch-Weld™ PUR Polyurethane Reactive Adhesives, you have hot melt speed with structural adhesive benefits for bonding a wide range of substrate combinations: wood to wood, MDF to MDF, PVC to SBR, FRP to FRP, glass to wood, and much more. Both self-contained applicators are easy to use and maintain with disposable nozzles and no purging. Trigger a neat bead of adhesive at up to 11 lbs./hr. for many applications.

## Thin, flexible bond line to improve fit, appearance, and durability



Two pieces of oak are edge spliced with 3M™ Scotch-Weld™ Polyurethane Reactive (PUR) Adhesive System.



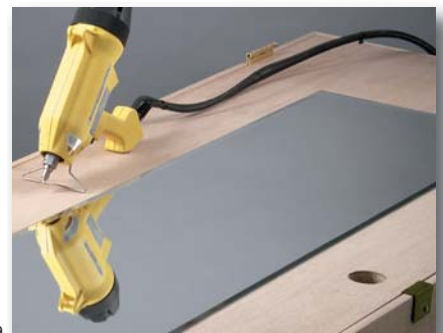
After staining, the bond line is hard to find. Look inside the circle.



The wood fails before the bond line in this test and many other applications.



For both PUR Easy and PUR Easy 250, an optional filter/pressure regulator is available to remove particulate material and water.



Bond mirrors to wood doors with immediate handling strength to keep assembly moving.



Choice of viscosities and open time to match application requirements for bonding wood to wood and other substrates.



Bond wood components throughout a hot tub enclosure. Durable bond resists temperature differentials, weathering, moisture, and chemicals.

# 3M™ Scotch-Weld™ Polyurethane Reactive (PUR) Easy Adhesive Systems

## Lower application temp for many substrates including heat sensitive

- Electrically-heated pneumatic green applicator dispenses adhesive at 170°F (77°C) with the squeeze of a trigger
  - Adhesive can stay in applicator at dispensing temperature for up to 40 hours
- Four adhesives with a range of properties including adhesion to heat sensitive substrates
- Optional pre-heater to keep cartridges ready to use



Bond wood or plastic rosettes to wood drawers without fixturing or drying time.

64



63



Permanently and quickly bond wood and MDF (Medium Density Fiberboard) bottoms and side panels in drawers.

65



Adhesives are available for bonding a variety of wood sizes and configurations such as this mortise and tenon assembly.

66

## 3M™ Scotch-Weld™ Polyurethane Reactive (PUR) Easy Adhesives

Product	Description	Viscosity @ 170°F (77°C) (cps)	Open Time (Min.)	Set Time (Sec.)	Shore D	Tensile Strength (PSI)	Elongation (%)
17005	• Very fast set time • Excellent wood bonding adhesive • Medium open time	28,600	0.75	5	65	3900	725
17010	• Fast set time • Best for bonding wood and plastics • Small-to-medium parts assembly	14,200	0.75	10	35	1055	750
17030	• Medium set time • Low viscosity • Best for bonding wood to select plastics • Thin glue line	15,700	1	30	60	4000	625
17060	• Long open time • Lower viscosity • Thin glue line	9600	2.5	60	30	1625	400

Note: The technical information and data should be considered representative only and should not be used for specification purposes.

### Shelf Life

12 Months is the maximum amount of time an end-user has to use the product while stored within the conditions recommended by 3M.

### Open Time

This is the maximum time between the application of the adhesive and when the parts must be joined together. This information is based on 1/8" bead and non-metallic substrates at 75°F (20°C).

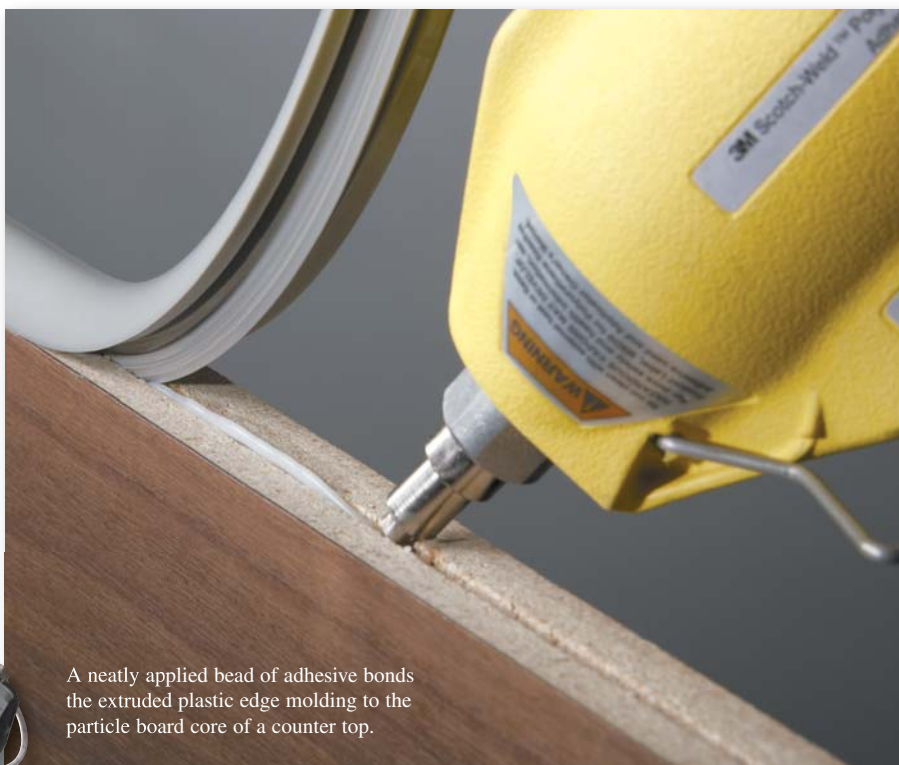
### Set Time

Also known as fixturing/clamping time. This is the minimum amount of time required for the adhesive to solidify and hold the parts together (able to support a tensile load of 5 psi).

# 3M™ Scotch-Weld™ Polyurethane Reactive (PUR) Easy 250 Adhesive Systems

## Higher application temp for longer open time and many difficult-to-bond applications

- Electrically-heated pneumatic yellow applicator dispenses adhesive at 250°F (121°C) with the squeeze of a trigger
  - Adhesive can stay in applicator at dispensing temperature for up to 16 hours
- Five adhesives with a range of properties including adhesion in difficult-to-bond jobs such as hardwood miter corners
- Optional dual temperature pre-heater to keep cartridges ready to use



A neatly applied bead of adhesive bonds the extruded plastic edge molding to the particle board core of a counter top.

68



67



69

With a thin bond line, PUR 250 adhesive makes a secure, aesthetically-pleasing crown molding assembly.



70

For furniture and upholstery, PUR 250 adhesive bonds leather or fabric gimping and seams.

## 3M™ Scotch-Weld™ Polyurethane Reactive (PUR) Easy 250 Adhesives

Product	Description	Viscosity @ 250°F (121°C) (cps)	Open Time (Min.)	Set Time (Sec.)	Shore D	Tensile Strength (PSI)	Elongation (%)
Wood Adhesives							
250015	• Fast set time for wood and select plastics	7000	1.5	15	65	3900	750
250060	• Medium set time for wood and select plastics	7000	2	60	60	4200	675
250120	• Medium set time • Low viscosity • Very thin bond line for wood	3000	4	120	60	4000	625
Plastic Adhesives							
250030	• Fast set time for many plastics including polystyrene and polyacrylic	13,000	2	30	50	3900	725
250150	• Long open and set times for wood, plastics, and material combinations such as aluminum or glass to plastics or wood	9000	4	150	45	3300	700

Note: The technical information and data should be considered representative only and should not be used for specification purposes.



## 3M™ Scotch-Weld™ Polyurethane Reactive (PUR) Easy 250 Adhesives

Product	Description	Application temperature	Viscosity @250°F (cps)	Color(s)	Open time (min.)	Set time (sec.)	Shore D	Tensile strength (PSI)	Elongation %
TE015	• Extrudable with very fast set time • Bond wood and selected plastics	250°F (121°C)	7,000	White/Off-White	1.5	15	65	3950	750
TE030	• Extrudable with fast set time • Bond wood and selected plastics	250°F (121°C)	16,000	White/Off-White	1	30	60	3800	725
TE031	• Extrudable with fast set time • Bond a wide variety of plastics, including polystyrene and polyacrylic	250°F (121°C)	13,000	White/Off-White, Black	2	30	50	3900	725
TE040	• Extrudable with fast set time • Low viscosity • Strong, flexible bonds • Bond plastics, wood, aluminum, and glass	250°F (121°C)	7,000	White/Off-White	2	40	35	2750	860
TE100	• Extrudable with medium set time • Bond wood and selected plastics • Thin bond lines	250°F (121°C)	7,000	White/Off-White, Black	2	60	61	4200	675
TE200	• Extrudable with fast set time • Low viscosity • Bond wood and selected plastics • Thin bond lines	250°F (121°C)	3,000	White/Off-White	4	120	60	4000	625
TS230	• Sprayable/extrudable with long set time • Bond variety of plastics, including polystyrene and polyacrylic • Bond aluminum and glass to plastic and wood	250°F (121°C)	9,000	White/Off-White, Black	4	150	45	3300	700
TS115 HGS	• Sprayable/extrudable/roll coatable with fast set time • Bond wood, FRP, other plastics to themselves, metal, glass	250°F (121°C)	16,000	White/Off-White	10	60	47	3200	600

Note: The technical information and data on these pages should be considered representative or typical only and should not be used for specification purposes.



### Job-matched tips –

- 1) Nozzle assembly (021200-89514) supplied with either PUR Easy or PUR Easy 250 applicator.
- 2) Threaded cap for sealing tip after use.
- 3) Extension tip for improved sight line in hard-to-reach areas.
- 4) .062" tip for low flow applications.
- 5) .125" tip for high flow applications.



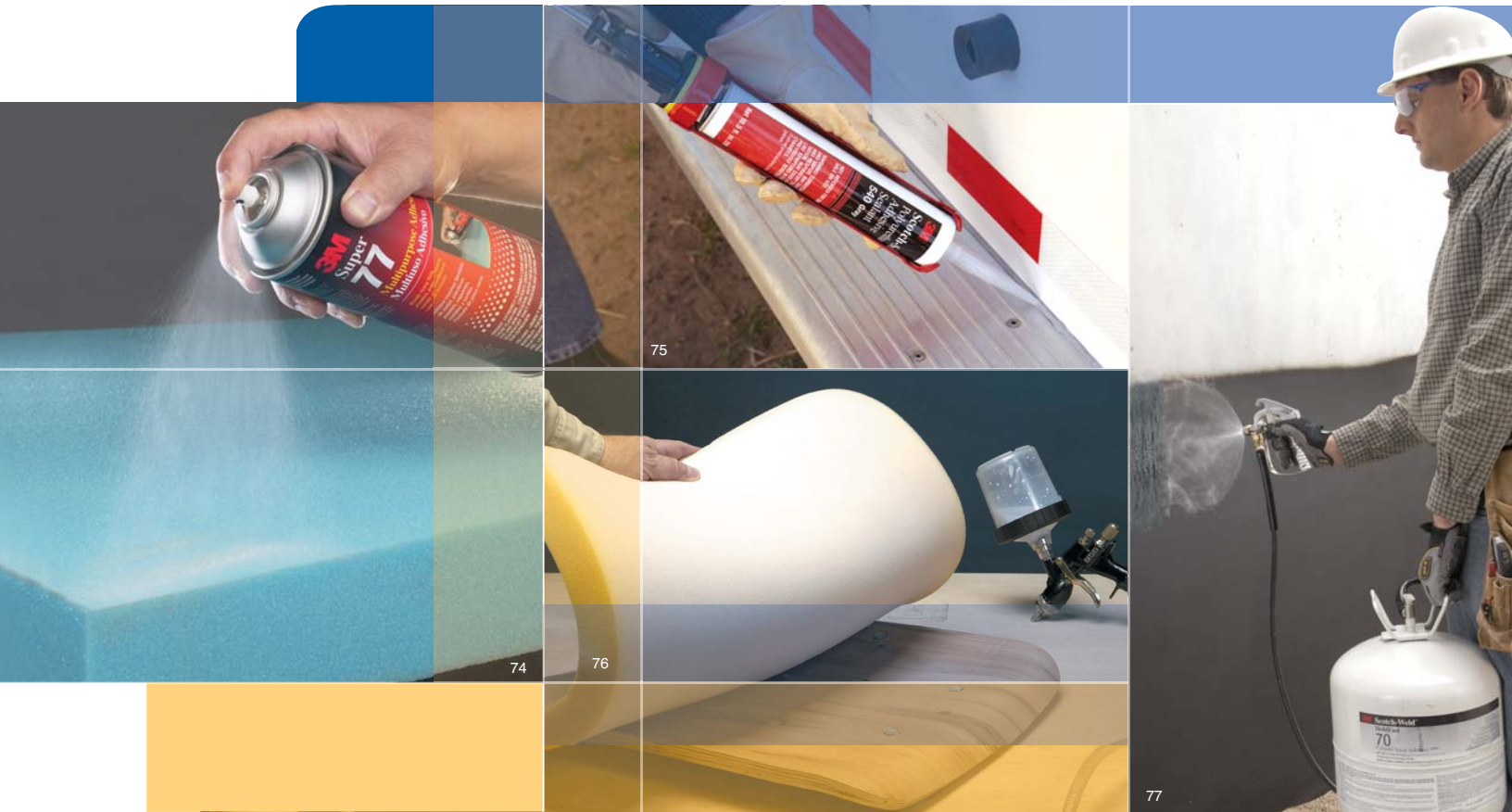
Benchmark system with foot pedal activation for hands-free operation of either PUR Easy or PUR Easy 250 applicator.

### Container sizes to meet your production volume –

- 10 fl.oz. cartridges
- 2k foil packs
- 5-gallon pail
- 55-gallon drum



# 3M™ Non-Structural Adhesives



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3M™ Non-Structural Strength Adhesives bond substrates used in insulation applications, cushioning, decorative trim, packaging, paneling, sealing, gasketing, countertops, furniture, woodworking, and general assembly. Materials include rubbers, plastics, fabric, leather, wood, metals, and glass. A range of bond strength is available to help meet specific requirements wherever structural strength is not required.

Products include the following:

- 3M™ Fastbond™ and Scotch-Weld™ Industrial Adhesives
- 3M™ Fastbond™ and Scotch-Weld™ Contact Adhesives
- 3M™ Scotch-Weld™ Cylinder Spray Adhesives
- 3M™ Scotch-Weld™ Hot Melt Spray Adhesives
- 3M™ Aerosol Adhesives
- 3M™ Cleaners and Lubricants
- 3M™ Concrete Repair Products
- 3M™ Sealants

# 3M™ Fastbond™ and Scotch-Weld™ Industrial Adhesives

## Innovative answers to a wide variety of non-structural bonding challenges

3M™ Fastbond™ and Scotch-Weld™ Adhesives are industrial tools designed to provide innovative answers to a wide variety of non-structural bonding problems.

Some formulations are tailored to specific types of applications such as 3M™ Scotch-Weld™ Rubber and Gasket Adhesives. These high strength, fast drying elastomers bond polycarbonate, vinyl, and many other plastics to themselves and materials such as wood or metal. With 3M™ Scotch-Weld™ Rubber and Gasket Adhesives you can easily bond neoprene, EPDM, and many more.

Depending on the specific 3M industrial adhesive, you can select drums, cans, pails, or handy tubes. These collapsible squeeze tubes are self-contained, lightweight applicators to give you “take-it-to-the-job” convenience for multi-station or low volume assembly and field repairs.



79 For a reliable non-structural adhesive, you're likely to find just what you need in the 3M™ Fastbond™ and Scotch-Weld™ lines backed with more than 50 years of 3M adhesives research and engineering. For example, 3M™ Fastbond™ Insulation Adhesive 49 is a fast tacking, pressure sensitive formulation for bonding fabric, insulation, and other lightweight materials to themselves, or to metal, wood, and other substrates.



80 When refurbishing a pinball machine, 3M™ Scotch-Weld™ Plastic Adhesive 4693H bonds and seals decorative translucent plastic inserts into the underside of the playing surface.



81 To prevent moisture penetration, a pressure flow gun applies 3M™ Scotch-Weld™ Rubber and Gasket Adhesive to bond a rubber gasket into a commercial light fixture cover.



82 With excellent resistance to fuel and oil, 3M™ Scotch-Weld™ Nitrile High Performance Rubber and Gasket Adhesive 847 bonds and seals chemical drum gaskets in place.



83 HVAC duct insulation is easy and economical to apply with 3M™ Fastbond™ Insulation Adhesive 49. This single-component, water-based pressure sensitive formulation speeds up assembly with instant tack.



84 In washing machine repair, 3M™ Scotch-Weld™ Neoprene High Performance Rubber and Gasket Adhesive 1300 bonds with high immediate strength and seals the doughnut ring seal in the outer tub.



85 In bonding plastic feathers and nocks onto arrow shafts, fast-tacking 3M™ Scotch-Weld™ Industrial Plastic Adhesive 4475 dries quickly and resists plasticizers, water, and heat up to 200°F (93°C).

3M™ Scotch-Weld™ Plastic Adhesives

Product	Description	Solids Weight (Approx.)	Flash Point (Closed Cup)	Consistency	Color Dry Film	Application Method	Bonding Range	Overlap Shear Strength (PSI)		Peel Strength (PIW)
								75°F (24°C)	180°F (82°C)	75°F (24°C)
826	<ul style="list-style-type: none"> <li>Fast drying for many plastic films</li> <li>Resists aromatic and aliphatic fuels, water, oil</li> </ul>	24%	35°F (3°C)	Thin liquid	Amber	Spray, brush	Up to 45 minutes	198 <sup>(1)</sup> 59 <sup>(1)</sup>	27 <sup>(3)</sup>	N/A
1099	<ul style="list-style-type: none"> <li>Fast drying and heat curable</li> <li>Resists weathering, water, oil, plasticizer migration, aliphatic fuels</li> <li>Meets MMM-A-189C, Class 2</li> </ul>	32%	0°F (-18°C)	Medium liquid	Light Tan	Brush, flow	Up to 40 minutes	1306 <sup>(1)(2)</sup>	643 <sup>(1)(2)</sup>	31 <sup>(3)</sup>
1099L	<ul style="list-style-type: none"> <li>Sprayable version of 1099 Adhesive</li> </ul>	24%	0°F (-18°C)	Thin liquid	Light Tan	Spray, brush	Up to 20 minutes	1306 <sup>(1)(2)</sup>	643 <sup>(1)(2)</sup>	31 <sup>(3)</sup>
2262	<ul style="list-style-type: none"> <li>Quick tack, clear, non-staining</li> <li>Resists plasticizer migration for bonding many flexible vinyls</li> </ul>	25%	0°F (-18°C)	Thin liquid	Clear	Brush, flow	Up to 20 minutes	N/A	N/A	17 <sup>(4)</sup>
4475	<ul style="list-style-type: none"> <li>Clear, fast tacking, dries quickly</li> <li>Resists water, plasticizers detergent, oils and grease</li> </ul>	42%	20°F (-7°C)	Medium liquid	Clear	Flow	Up to 10 minutes	N/A	N/A	44 <sup>(3)</sup>
4491	<ul style="list-style-type: none"> <li>Resists weathering, water, fuels, oil, and plasticizers</li> <li>HAPS-free and SCAQMD Rule 1168 compliant solvent-based adhesive</li> </ul>	22-26%	0°F (-18°C)	Thin liquid	Light Tan	Spray	Up to 20 minutes	1306 <sup>(1)(2)</sup>	643	N/A
4693	<ul style="list-style-type: none"> <li>Long tack range</li> <li>Water and heat resistant bond for many plastics, including polyethylene and polypropylene</li> </ul>	24%	1°F (-17°C)	Thin liquid	Clear	Spray, brush	Up to 60 minutes	N/A	N/A	22 <sup>(3)</sup>
4693H	<ul style="list-style-type: none"> <li>High viscosity version of 4693 Adhesive for collapsible tubes</li> </ul>	36%	1°F (-17°C)	Medium liquid	Clear	Flow, brush	Up to 60 minutes	N/A	N/A	22 <sup>(3)</sup>

(1) Aluminum to aluminum @ 0.1 inches/minute separation rate.

(3) Canvas to cold rolled steel @ 2.0 inches/minute separation rate.

(4) Unsupported vinyl to steel @ 2.0 inches/minute separation rate.

(2) Bonds heat cured for 15 minutes @ 325°F, 150 PSI

3M™ Scotch-Weld™ Rubber and Gasket Adhesives

Product	Description	Solids Weight (Approx.)	Flash Point (Closed Cup)	Consistency	Color Dry Film	Application Method	Bonding Range	Overlap Shear Strength (PSI)		Peel Strength (PIW)
								75°F (24°C)	180°F (82°C)	75°F (24°C)
847	<ul style="list-style-type: none"> <li>Quick drying and flexible with fuel and oil resistance</li> <li>Heat and solvent reactivatable</li> <li>Curable with heat</li> <li>Meets MIL-C-4003</li> </ul>	36%	0°F (-18°C)	Medium liquid	Brown	Flow, brush	Up to 15 minutes	200 <sup>(1)</sup>	9 <sup>(1)</sup>	40 <sup>(2)</sup>
847L	<ul style="list-style-type: none"> <li>Lower viscosity version of 847 Adhesive for spray application</li> </ul>	24%	0°F (-18°C)	Thin syrup	Brown	Spray, brush	Up to 20 minutes	200 <sup>(1)</sup>	9 <sup>(1)</sup>	40 <sup>(2)</sup>
847H	<ul style="list-style-type: none"> <li>Higher viscosity version of 847 Adhesive</li> </ul>	50%	0°F (-18°C)	Thick syrup	Brown	Flow, brush	Up to 10 minutes	200 <sup>(1)</sup>	9 <sup>(1)</sup>	40 <sup>(2)</sup>
1300	<ul style="list-style-type: none"> <li>High immediate strength</li> <li>Fast-drying and heat resistant for rubber and metal</li> <li>Meets MIL-M-81288</li> </ul>	37%	-14°F (-26°C)	Medium liquid	Yellow	Flow, brush	Up to 12 minutes	549 <sup>(1)</sup>	136 <sup>(1)</sup>	52 <sup>(2)</sup>
1300L	<ul style="list-style-type: none"> <li>Lower viscosity version of 1300 Adhesive • Sprayable</li> <li>Meets Mil Spec MMM-A-121</li> </ul>	29%	-14°F (-26°C)	Thin liquid	Yellow	Spray, brush	Up to 8 minutes	549 <sup>(1)</sup>	136 <sup>(1)</sup>	52 <sup>(2)</sup>
2141	<ul style="list-style-type: none"> <li>Easy brushing • General purpose with excellent water resistance</li> <li>Meets MIL-A-5092B</li> </ul>	30%	-14°F (-26°C)	Medium liquid	Light Yellow	Flow, brush	Up to 15 minutes	377 <sup>(1)</sup>	68 <sup>(1)</sup>	32 <sup>(2)</sup>
4799	<ul style="list-style-type: none"> <li>Brushable paste consistency with low soak-in on porous surfaces • Can bond EPDM rubber</li> </ul>	36%	-14°F (-26°C)	Thin paste	Black	Brush, trowel	Up to 15 minutes	N/A	N/A	28 <sup>(2)</sup>

Note: The technical information and data on these pages should be considered representative or typical only, and should not be used for specification purposes.

(1) Birch plywood to birch plywood @ 0.1 inches/minute separation rate.

(2) Canvas to cold rolled steel @ 2.0 inches/minute separation rate.

## 3M™ Insulation and Light-Duty Adhesives

	Product	Description	Solids Weight (Approx.)	Flash Point (Closed Cup)	Consistency	Color Dry Film	Application Method	Bonding Range	Peel Strength (PIW)75°F (24°C)
3M™ Fastbond™ Adhesives	49	<ul style="list-style-type: none"> <li>Fast tacking, high performance pressure sensitive adhesive for lightweight materials</li> <li>Low VOCs</li> <li>UL component recognition MAGW2 file MH 6288</li> <li>GREENGUARD™ Certified</li> </ul>	55%	None	Thin liquid	Clear	Spray, brush, roller	30 days plus	3.0 <sup>(a)</sup>
	4213NF	<ul style="list-style-type: none"> <li>Resists staining and discoloration</li> <li>Dries clear</li> <li>Low VOCs</li> </ul>	54%	None	Medium liquid	Clear	Brush, roller, trowel	5 minutes	12.0 <sup>(a)</sup>
	4224NF	<ul style="list-style-type: none"> <li>Permanently pressure sensitive with aggressive tack</li> <li>Plasticizer resistant</li> <li>Low VOC content</li> <li>GREENGUARD™ Certified</li> </ul>	40%	None	Thick liquid	Blue, Clear	Spray, brush, roller, trowel, coater	30 days plus	4.4 <sup>(a)</sup>
3M™ Scotch-Weld™ Adhesives	1870	<ul style="list-style-type: none"> <li>Single surface application</li> <li>Very long tack range</li> <li>Flexible bond</li> <li>Resists bleed through</li> </ul>	26%	-7°F (-22°C)	Thin liquid	Tan	Spray, brush	Up to 40 minutes	7.0 <sup>(a)</sup>
	4323	<ul style="list-style-type: none"> <li>Resists wear, heat and dead load creep</li> </ul>	66%	1°F (-17°C)	Mastic	Gray	Caulk, flow, trowel	Up to 20 minutes	N/A
	4550	<ul style="list-style-type: none"> <li>Fast tacking</li> <li>Long bonding range</li> </ul>	35%	Less than -20°F (-29°C)	Medium liquid	Trans-lucent	Low pressure spray	Up to 60 minutes	23.0 <sup>(b)</sup>
Other 3M™ Adhesives	Product	Features	Size	% Solids	Sq. Ft. Coverage @ 1 gram dry (per gallon)	SCAQMD Rule 1168 Compliant			
	Super 77™	<ul style="list-style-type: none"> <li>High coverage, low soak-in for long lasting bonds</li> <li>High temperature resistance</li> <li>Clear and Red</li> </ul>	5 gal., 52 gal.	37	1,092	No			
	Polystyrene Foam Insulation 78	<ul style="list-style-type: none"> <li>Bonds most insulation, including expanded polystyrene and extruded polystyrene</li> <li>Will not attack foam board</li> <li>Clear</li> </ul>	5 gal.	35	1,049	No			

## 3M™ Solvent

Product	Features	Base	Solids Weight (Approx.)	Flash Point (Closed Cup)	Consistency	Color	Application Method
Solvent No. 2	<ul style="list-style-type: none"> <li>Contains petroleum distillate and toluene for removing many oil-soluble adhesives, coatings and sealers</li> <li>Not recommended for surface preparation</li> </ul>	Toluene aliphatic blend	0%	-14°F (-26°C)	Very thin liquid	Clear	Brush, dip, spray

## 3M™ Adhesive Remover

Product	Features	Size	% Solids	Sq. Ft. Coverage @ 1 gram dry (per gallon)	SCAQMD Rule 1168 Compliant
Adhesive Remover	<ul style="list-style-type: none"> <li>Ideal for removal of adhesive residue or for surface preparation</li> <li>Solvent-free</li> <li>Also removes heavy oils, grease, silicone, tar and grime</li> <li>Pale Yellow</li> </ul>	1 gal., 5 gal., 52 gal.	NA	NA	No

Note: The technical information and data on these pages should be considered representative or typical only, and should not be used for specification purposes.

- Canvas to cold rolled steel @ 2.0 inches/minute separation rate.
- Supported vinyl to wood @ 2.0 inches/minute separation rate.
- Primed polyester to steel @ 2.0 inches/minute separation rate.
- Maple to itself @ 50% R.H. Test at 0.1 inches/minute separation rate.



## 3M™ Fastbond™ and Scotch-Weld™ Contact Adhesives

**A tradition of 40 years and the performance you'll want for a long time to come**

This line offers a wide range of choices for contact adhesive applications. Select from bonding ranges, strengths, solids content, and solvent or water-based formulations to meet requirements for bonding laminate, foam, and more.

In the line, you'll find the water-based pioneer 3M™ Fastbond™ Contact Adhesive 30NF – proven for about 40 years in cabinet shops and compliant with the stringent requirements of South Coast Air Quality Management District Rule 1168. Plus, there's 3M™ Fastbond™ Contact Adhesive 2000NF with handling speed exceeding most solvent-based systems and up to 350 psi in overlap shear.

### The 3M™ Fastbond™ Water-Based Story

While competition pressures you to improve productivity, regulatory legislation demands that you move toward more environmentally-responsible technologies. Some local and regional regulations have made traditional solvent-based contact adhesives virtually obsolete.

By replacing solvent-based adhesives with a water-based 3M™ Fastbond™ Adhesive, compliance is getting easier in more and more applications. At the same time, you have a choice of production and end-use characteristics as you can see in the chart at far right.



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Fastbond is the 3M trademark on a continually growing line of water-based adhesives. For example, 3M™ Fastbond™ Foam Adhesive 100 is a one-part, water-dispersed formulation for bonding many porous substrates to porous or non-porous substrates with minimal dry time.



88

For tabletop lamination, 3M™ Fastbond™ Contact Adhesive 2000NF gives you three times the coverage of a typical solvent-based system. For production speed, you go from spray to trim in seconds.



89

In compound cushion assembly, 3M™ Fastbond™ Foam Adhesive 100 holds curves in seconds. Lighter density foam is adhered around the higher density core with a smooth rounded edge.



90

3M™ Fastbond™ Foam Adhesive 100 quickly bonds substrates throughout chairs and couches. Bond foam to foam and fiber fill, foam to wood, fiber fill to fabric, and more.



91

In cabinet assembly, 3M™ Fastbond™ Contact Adhesive 30NF is a formulation proven in shops for four decades. Combines open time of up to 4 hours with high immediate bond strength. Apply with roller, brush, or spray gun.



92

In bonding carpet to fiberglass flooring and steps, 3M™ Fastbond™ Contact Adhesive 2000NF helps withstand the foot traffic and moisture in boat cabins.

Photo courtesy of Grady White Boats Incorporated.

### 3M™ Fastbond™ Contact Adhesives, Water-Based

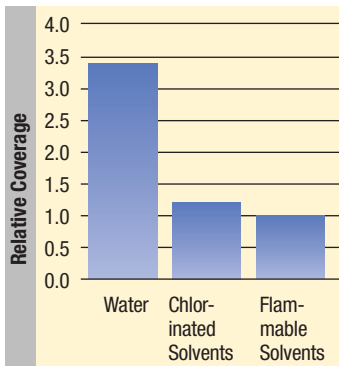
Product	Description	Solids Weight (Approx.)	Flash Point (Closed Cup)	Consistency	Color Dry Film	Application Method	Bonding Range	Overlap Shear Strength (PSI)		Peel Strength (PIW)	
								75°F (24°C)	180°F (82°C)	75°F (24°C)	
Contact Adhesives, Water-Based	30NF	• Long bonding range with high immediate bond strength • Economical high coverage • Meets MIL-A-24179A, Type I • GREENGUARD™ Certified	50%	None	Thin liquid	Green, Neutral	Spray, roller, brush	Up to 4 hours	480 <sup>(1)</sup>	60 <sup>(1)</sup>	5.9 <sup>(2)</sup>
	30H	• High viscosity version of 30NF for roll coating • GREENGUARD™ Certified	50%	None	Medium liquid	Green	Spray, roller, brush, roll coat	Up to 4 hours	480 <sup>(1)</sup>	60 <sup>(1)</sup>	5.9 <sup>(2)</sup>
	2000NF	• Water-dispersed, activated adhesive • Immediate bonding and handling strength without forced drying • GREENGUARD™ Certified	49%	None	Thin liquid	Blue, Light Orange, Neutral	Co-Spray	Up to 2 hours	350 <sup>(1)</sup>	50 <sup>(1)</sup>	4.1 <sup>(2)</sup>
	100NF	• One-part, fast setting with neoprene base • Bonds many porous substrates to porous or non-porous substrates • GREENGUARD™ Certified	47%	None	Very thin liquid	Lavender, Neutral	Spray	Up to 20 minutes	NA	NA	1.1 <sup>(2)</sup>

### 3M™ Scotch-Weld™ Contact Adhesives

Product	Description	Solids Weight (Approx.)	Flash Point (Closed Cup)	Consistency	Color Dry Film	Application Method	Bonding Range	Overlap Shear Strength (PSI)		Peel Strength (PIW)	
								75°F (24°C)	180°F (82°C)	75°F (24°C)	
Contact Adhesives	5	• Rapid strength buildup • Heat and creep resistant bond	19%	-14°F (-26°C)	Thin liquid	Green, Light Yellow	Spray	30 minutes maximum	482 <sup>(1)</sup>	65 <sup>(1)</sup>	19 <sup>(2)</sup>
	10	• Similar performance to 5 • Brushable with higher coverage • Meets requirements of MMM-A-121, MMM-A-130B, and A-A-1936A	22%	-14°F (-26°C)	Thin liquid	Light Yellow	Brush, roller	30 minutes maximum	482 <sup>(1)</sup>	65 <sup>(1)</sup>	19 <sup>(2)</sup>
	1357	• Rapid buildup to a very high strength bond for metal • Resists heat and continuous load stress • Meets MIL-A-21366A, MMM-A-121	25%	-14°F (-26°C)	Thin liquid	Gray-green, Light Yellow	Brush, spray	30 minutes maximum	536 <sup>(1)</sup>	199 <sup>(1)</sup>	42 <sup>(2)</sup>
	1357L	• Lower solids, lower viscosity version of 1357 for automatic spray	18%	-14°F (-26°C)	Thin liquid	Gray-green	Spray	30 minutes maximum	536 <sup>(1)</sup>	199 <sup>(1)</sup>	42 <sup>(2)</sup>

(1) Birch plywood to birch plywood @ 0.1 inches/minute separation rate. (2) Canvas to cold rolled steel @ 2.0 inches/minute separation rate.

3M™ Hi-Strength 90 Bulk Adhesive is available in 5-gallon and 55-gallon containers. See page 43 for features and details.



Carrier	Water	Chlorinated Solvents	Flammable Solvents
% Solids	50%	15%	20%
Density (lbs/gal)	9.1	10.8	6.7
lbs. of adhesive/gal	4.6	1.6	1.3
Relative coverage	3.4	1.2	1.0
Issues		Toxicity	Flammability



**Buy only the quantity you need** – Depending on the specific adhesive, you can select tubes, quart or gallon jugs for convenient handling, or 5-gallon pails and 55-gallon drums for large bulk dispensing.

Note: The technical information and data on these pages should be considered representative or typical only and should not be used for specification purposes.

## 3M™ Scotch-Weld™ Cylinder Spray Adhesives

### Aerosol convenience with bulk productivity for bonding HPL, foam, rubber, and more

With these self-contained pressurized cylinders, you simplify many applications. No air, no waste, no costly maintenance,

- Helps increase productivity with fast application and no time-consuming equipment setup and cleanup
- Freedom from expensive capital equipment and maintenance of spray equipment and compressor
- Targets adhesive where you want with little waste
- High solids, high coverage gives you more usable adhesive for your money



For HPL countertop assembly, 3M™ Scotch-Weld™ Cylinder Spray Adhesive 94 CA dries quickly to reach postformable strength in 1-5 minutes. 1-15 minute open time provides flexibility in assembly speed. Formulated specifically with low telegraphing for thin veneers and glossy laminates.



96

With 3M™ Foam Fast Cylinder 74 Spray Adhesive a fast light coat bonds quilted fabric to solid core mattress. High coverage reduces applied cost. Foam-tearing strength prevents cover spin.



97

When you want a water-based adhesive to bond rubber to metal flooring, insulation to duct work, and more, 3M™ Fastbond™ 30NF Cylinder Spray Contact Adhesive is SCAQMD Rule 1168 Compliant and GREENGUARD™ Certified.



98

99

For fast, easy foam board installation above and below grade, simply spray and stick with 3M™ Scotch-Weld™ HoldFast 70 Cylinder Spray Adhesive. Bonds foam to concrete, waterproofing, OSB, and more without damaging the foam.



100

With heavy web spray and low soak-in, 3M™ Scotch-Weld™ HoldFast 70 Cylinder Spray Adhesive attaches noise abatement foam to the plywood walls of an anechoic chamber.



101

In motor home construction, 3M™ Scotch-Weld™ HoldFast 70 Cylinder Spray Adhesive or Polystyrene Foam Insulation 78 ET not only bonds foam insulation to wall panels but also plastic panels to wood framing in shower enclosures.



102

3M™ Scotch-Weld™ Cylinder Spray Adhesives help improve speed and productivity for tilt-up contractors. Just spray and adhere reveal strips, shoe plates, chamfers and inlays to the casting slab without nailing or mechanical fasteners.



# Equipment simplification with 3M™ Scotch-Weld™ Cylinder Spray Adhesives

Traditional compressor and drum equipment, tools, and maintenance



103



104



What you see here is all you need

105



106



107



108

9501 6501 4001 QSS



109

Hose swivel T-Fitting

## 3M™ Scotch-Weld™ Cylinder Spray Adhesive Equipment and Accessories

- Cylinder Adhesive Applicator (includes 9501 Tip)
- Cylinder Adhesive Applicator H (includes 4001 Tip)
- Cylinder Adhesive Applicator EX w/18" Extension and 9501 Tip
- Cylinder Adhesive 9501 Spray Tip
- Cylinder Adhesive 4001 Spray Tip
- Cylinder Adhesive 6501 Spray Tip
- Cylinder Adhesive 250050 Spray Tip
- Cylinder Adhesive 650050 Spray Tip
- Cylinder Adhesive 730154 Spray Tip
- Cylinder Adhesive QSS Spray Tip
- Cylinder Adhesive Hose Swivel
- Cylinder Adhesive T-Fitting
- Cylinder Adhesive 6-Foot Hose
- Cylinder Adhesive 12-Foot Hose
- Cylinder Adhesive 25-Foot Hose
- Cylinder Adhesive 50-Foot Hose

## Uniform spray patterns with adjustable tip for economical use of adhesive



110



111



112



113

Left to right: Wide web for fast coverage and minimized overspray. Narrow web for neat targeted application. Lay-flat pebble pattern to reduce telegraphing even on thin laminates.

No wasteful "fire hosing," puddling, and uneven stringing.

## Product Information and Packaging

Product	Features	% Solids	Sq. Ft. Coverage @ 1 gram dry wt/sq.ft (per lb.) <sup>(1)</sup>	Spray Pattern	Bonding Range		Overlap Shear Strength <sup>(2)</sup> (PSI)
					One Surface	Two Surface	
Fastbond™ Contact Adhesive 30 NF	<ul style="list-style-type: none"> <li>• GREENGUARD™ Certified</li> <li>• High strength, non-flammable, water-based contact adhesive</li> <li>• Postformable adhesive that bonds particle board, plywood, plastic laminate, fabric and more</li> <li>• Green or Neutral</li> </ul>	50	227	Mist	NR	15 min. - 4 hrs	up to 400
General Purpose 60 CA	<ul style="list-style-type: none"> <li>• Very high coverage</li> <li>• General purpose adhesive that bonds many foams, plastics and wood</li> <li>• Clear</li> </ul>	43	195	Web	2 min - 30 min	2 min - 60 min	up to 300
HoldFast 70	<ul style="list-style-type: none"> <li>• Very fast tacking</li> <li>• Low soak-in on porous or irregular surfaces</li> <li>• Bonds polystyrene without degrading the surface</li> <li>• Clear</li> </ul>	21	95	Web	1 min - 60 min	1 min - 60 min	up to 200
Foam Fast 74	<ul style="list-style-type: none"> <li>• Fast tack with foam-tearing strength</li> <li>• Soft non-dimpling glue line</li> <li>• Clear or Orange</li> </ul>	22	100	Web	30 sec - 15 min	30 sec - 15 min	up to 200
Non-Flammable Foam Fast 74 NF	<ul style="list-style-type: none"> <li>• Non-flammable version of Foam Fast 74</li> <li>• Contains Methylene Chloride</li> <li>• Clear</li> </ul>	22	100	Web	1 min - 60 min	1 min - 60 min	up to 300
Super 77™	<ul style="list-style-type: none"> <li>• Fast, aggressive tack for bonding many lightweight materials</li> <li>• Versatile adhesive can be used on typical infusion materials: fiberglass fabrics, balsa and foam coring, flow media and peel ply</li> <li>• Clear or Red</li> </ul>	27	123	Mist	15 sec - 15 min	15 sec - 30 min	up to 300
Polystyrene Foam Insulation 78 ET	<ul style="list-style-type: none"> <li>• Extended tack range version of 78</li> <li>• Clear or Green</li> </ul>	17	77	Web	1 min - 60 min	1 min - 60 min	up to 200
Hi-Temperature Polystyrene Foam Insulation 78 HT	<ul style="list-style-type: none"> <li>• High performance, high temperature polystyrene spray adhesive</li> <li>• Blue</li> </ul>	15	68	Web	1 min - 10 min	1 min - 20 min	up to 500
Hi-Strength 90	<ul style="list-style-type: none"> <li>• Fast, high performance contact bond strength</li> <li>• Adheres wood, high pressure laminate, metal, polyethylene, polypropylene and more</li> <li>• Clear</li> </ul>	13	59	Web	NR	1 min - 10 min	up to 600
Hi-Strength Laminating 92	<ul style="list-style-type: none"> <li>• High strength bonding of wood, laminate, foam and more</li> <li>• Clear or Red</li> </ul>	23	104	Web	1 min - 20 min	1 min - 20 min	up to 400
Hi-Strength Postforming 94 CA	<ul style="list-style-type: none"> <li>• GREENGUARD™ Certified, solvent-based adhesive</li> <li>• High strength, postformable contact adhesive</li> <li>• Low telegraphing spray pattern</li> <li>• Clear or Red</li> </ul>	28	127	Pebble	NR	1 min - 30 min	up to 500
Hi-Strength Non-Flammable 98NF	<ul style="list-style-type: none"> <li>• High strength bonding of wood, laminate, foam and more</li> <li>• Nonflammable</li> <li>• Contains Methylene Chloride</li> <li>• Clear or Red</li> </ul>	20	91	Web	1 min - 60 min	1 min - 60 min	up to 300

(1) 1 g/sq ft of adhesive coverage may not be enough for a some products. Higher strength applications may need as much as 2.5 grams dry wt/sq ft. Convert sq ft coverage by dividing by 2.5.

(2) Testing based on ASTM D3163 with birch plywood, 1 inch overlap, 1.5 - 2.5 gm/sq.ft (dry adhesive wt.)

(3) Testing based on ASTM D1876-01 with coated canvas, pulled at 12 in./min.

(4) SAFT Shear Adhesion Failure Test with birch plywood, 1 inch overlap, 100 grams used, temperature start at 90F and ramped 10F every 10 min. until complete failure.

(5) M=Mini; L=Large; I=Intermediate; J=Jumbo

	Peel Strength <sup>(3)</sup> (PIW)	Heat Resistance in °F. <sup>(4)</sup>	SCAQMD Rule 1168 Compliant	Size (Net weight) <sup>(5)</sup>
	20	300	Yes	L (28.5 lb, 12.9 kg)
	18	170	Yes	L (27.2 lb, 12.3 kg) I (129.2 lb, 58.6 kg) J (276.0 lb, 125.2 kg)
	23	190	No	M (8.5 lb, 3.9 kg) L (27.3 lb, 12.4 kg) I (139.0 lb, 63 kg) J (288.0 lb, 130.6 kg)
	9	160	No	L (28.8 lb, 12.0 kg) I (148.5 lb, 67.4 kg) J (297.0 lb, 134.7 kg)
	25	210	No	M (10.5 lb, 4.8 kg) L (37.0 lb, 16.8 kg) I (185.6 lb, 84.2 kg) J (371.7 lb, 168.6 kg)
	5	150	No	L (29.3 lb, 13.3 kg)
	16	200	No	L (29.3 lb, 13.3 kg) I (139.0 lb, 63 kg) J (298.0 lb, 135.2 kg)
	16	260	No	M (8.5 lb, 3.9 kg) L (28.5 lb, 12.9 kg) I (138.6 lb, 62.9 kg) J (287.1 lb, 130.2 kg)
	14	250	No	L (28.8 lb, 13.1 kg) I (141.6 lb, 64.2 kg) J (283.2 lb, 128.5 kg)
	14	250	No	L (29.3 lb, 13.3 kg) I (139.0 lb, 63.0 kg) J (279.0 lb, 126.6 kg)
	30	210	Yes	M (7.6 lb, 3.4 kg) L (26.2 lb, 11.9 kg) I (128.0 lb, 58.1 kg) J (266.0 lb, 120.7 kg)
	26	240	No	M (10.5 lb, 4.8 kg) L (37.0 lb, 16.8 kg) I (185.6 lb, 84.2 kg) J (371.7 lb, 168.3 kg)

## Size Availability



Product	Cylinder sizes (lbs.)				Bulk	
	Mini	Large	Intermediate	Jumbo	5-gal	55-gal
60 CA		X	X	X	X	X
70	X	X	X	X		
74		X	X	X		X
74NF	X	X	X	X		
77		X			X	X
78 ET		X	X	X		
78HT	X	X	X	X		
90		X	X	X	X	X
92		X	X	X	X	X
94 CA	X	X	X	X	X	X
30NF		X			*	*
98NF	X	X	X	X		



\* Other sizes



3M™ Fastbond™ Contact Adhesive 30NF in pourable quart and one gallon plastic containers, 5-gallon pail, and 52-gallon drum

# 3M™ Scotch-Weld™ Hot Melt Spray Adhesives

## Solventless fast track for immediate bonding of foam and other lightweight materials

3M™ Scotch-Weld™ Hot Melt Spray Adhesive is a fast, neat alternative to solvent-based systems for bonding most foams, fabrics, plastics, particle board, and light-gauge metals. Applications range from furniture cushions to cushioning inserts, modular office panels to gym floor pads, and more. You simply spray a neat track of 100% solids adhesive right where you want it. Apply to one or both surfaces and bond substrates immediately.

Other features include:

- Up to 10-minute open time for handling convenience and bonding larger areas.
- One-part to eliminate the fuss of mixed systems.
- Designed for hand-held or bulk applicators.



119



120

In display cases for jewelry and other retail items, foam is bonded to foam and fabric. Low temperature spray will not damage heat-sensitive substrates.



121

In carrying case assembly, 3M™ Scotch-Weld™ Hot Melt Spray Adhesive bonds foam to foam, plywood, metal or plastic.

## 3M™ Scotch-Weld™ Hot Melt Spray Adhesives

Adhesives Characteristics and Suggested Coverage			
	6111/6111 Green	6111 HT/6111 HT Blue	6116
Description	Standard product	Higher heat resistance	Low viscosity
Color	Tan/Green	Tan/Blue	White
Open Time <sup>(1)</sup> One surface (Foam/PVC)	1 minute	3 minutes	2 minutes
Open Time <sup>(1)</sup> Two surface (Foam/Foam)	6 minutes	8 minutes	6 minutes
Heat Resistance <sup>(2)</sup>	145°F (63°C)	175°F (79°C)	160°F (71°C)
Peel Adhesion (PIW) <sup>(3)</sup>			
Fir	34.4	25.6	21.4
ABS	12.1	16.5	20.3
Polypropylene	46.3	14.4	16.4
PVC	9.9	16.3	N/A
Cold Rolled Steel	16.5	29.9	20.4
High Density Polyethylene	8.2	2.3	N/A
Typical Coverage	Smooth Surface	Textured Surface	
2-Surface Application	1-2 grams per square foot	2-3 grams per square foot	
1-Surface Application	3-5 grams per square foot	5-7 grams per square foot	

Note: The technical information and data on these pages should be considered representative or typical only and should not be used for specification purposes.

(1) Bonds were made by spraying adhesive onto 3/4 in. thick, 2 lb. density polyester urethane foam. Open time will vary depending on substrate.

(2) Tested per 3M IATD test method C-3093 using 2 lb. dead load.

(3) According to 3M IATD test method C-3012. 180° peel strength was determined at a cross head speed of 2 inches/minute at 73°F (23°C).

# 3M™ Scotch-Weld™ Hot Melt Adhesives and Applicators

## The 3M systems approach to help you improve productivity and lower costs

3M™ Scotch-Weld™ Hot Melt Adhesives and Applicators are advanced hand-held systems to help you improve productivity, lower cost, and minimize waste.

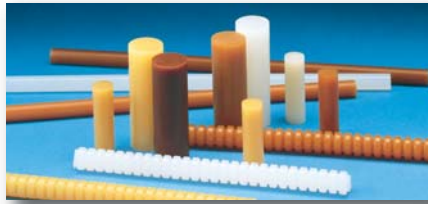
Adhesives are 100% solids thermoplastic resins that become fluid when heated and quickly wet the bonding surface. They cool, harden, and reach bond strength in seconds. You can move assemblies immediately to keep production flowing. This helps eliminate clamps, fixturing and drying, and saves time, energy and space.

Each adhesive is designed and precisely manufactured for efficient use in one of the portable 3M™ Scotch-Weld™ Hot Melt Applicators. Bond wood, plastic, foam, fabric, cardboard, and more.



3M™ Scotch-Weld™ Hot Melt Applicator LT with 3M low temperature (265°F/129°C) adhesive effectively bonds heat-sensitive substrates such as styrene foam to itself, corrugated, or other surfaces without damaging the foam.

123



122



124

For bonding the guide to a drawer bottom, 3M™ Scotch-Weld™ Hot Melt Adhesive 3738 provides high delivery rate and long bonding range to meet production requirements.



125

For versatility in P.O.P. assembly, 3M™ Scotch-Weld™ Hot Melt Adhesives bond a variety of plastics, woods, and light gauge metals.



126

For economical package sealing, 3M™ Scotch-Weld™ Hot Melt Adhesive 3762 is a versatile formulation with 35-second bonding range for production speed. Variety of tips for package types.



127

For great value, 3M™ Scotch-Weld™ Hot Melt Applicator AE II LT combines the best features of a high volume industrial system into a compact, self-contained applicator that delivers up to 4 pounds of adhesive per hour. Plugs into any 110V outlet for convenient portability.



128

3M™ Scotch-Weld™ Hot Melt Applicator LT and 3M™ Scotch-Weld™ Hot Melt Adhesives applied at low temperature (265°F/129°C) make quick work of wetting, gimping, and bonding fabric to wood.



129

Self-contained portable 3M applicators save the cost of bulk equipment for recoupage, manual random size case sealing, and many contract packaging situations.

# Selecting a 3M™ Scotch-Weld™ Hot-Melt Applicator to fit your needs



**A**  
3M™ Scotch-Weld™ Hot Melt Applicator LT. Medium volume using low melt adhesive. 130



**B**  
3M™ Scotch-Weld™ Hot Melt Applicator LT with Quadrack™ Converter. Medium volume using low melt adhesive. 131



**C**  
3M™ Scotch-Weld™ Pneumatic Hot Melt Applicator PG II LT with Speedloader. High volume using low melt adhesive. 132



**D**  
3M™ Scotch-Weld™ Hot Melt Applicator AE II LT. Low volume using low melt adhesive. 133



**E**  
3M™ Scotch-Weld™ Hot Melt Applicator TC. Medium volume. 134



**F**  
3M™ Scotch-Weld™ Hot Melt Applicator TC with Quadrack™ Converter. Medium volume. 135



**G**  
3M™ Scotch-Weld™ Pneumatic Hot Melt Applicator PG II with Speedloader. High volume. 136



**H**  
3M™ Scotch-Weld™ Hot Melt Applicator AE II. Low volume. 137



**I**  
3M™ Scotch-Weld™ Hot Melt Applicator EC. Medium volume; variable temperature control. 138



139

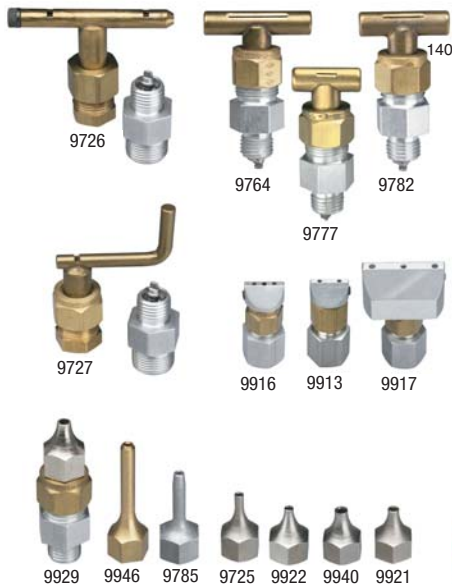
## Lightweight, easy-to-use units... 3M's innovative melt-on-demand or progressive feed technology.

	3M™ Scotch-Weld™ Hot Melt Applicators	Weight <sup>(1)</sup>	Output <sup>(2)</sup> lb/hr	Temperature <sup>(3)</sup>	Power (120V)	Adhesive dia. x length, inches	Features	Warranty (Months)
Low Melt Applicators	A LT	10.0 oz.	2.6	265°F (129°C)	150W	5/8 x 2 TC	For use with low melt adhesives	12
	B LT with Quadrack Converter	13.8 oz.	2.6	265°F (129°C)	150W	5/8 x 8 Q		
	C Pneumatic PG II LT with Speedloader	4.3 lbs.	6.0	265°F (129°C)	500W	1 x 3 PG	Pneumatic high output for low melt adhesives	12
	D AE II LT	20.0 oz.	4.0	265°F (129°C)	100W	1/2 x 12 AE	All electric operation for low melt adhesives	6
Hot Melt Applicators	E TC	10.0 oz.	3.5	385°F (196°C)	150W	5/8 x 2 TC	Easy to use with standard melt adhesives	12
	F TC with Quadrack Converter	13.8 oz.	3.5	385°F (196°C)	150W	5/8 x 8 Q		
	G Pneumatic PG II with Speedloader	4.3 lbs.	7.5	385°F (196°C)	500W	1 x 3 PG	Pneumatic high output for standard melt adhesives	12
	H AE II	20.0 oz.	4.0	400°F (204°C)	100W	1/2 x 12 AE	All electric operation for standard melt adhesives	6
Variable	H EC	24.0 oz.	5.5	260°F-450°F (127°-232°C)	350W	5/8 x 8 Q	Temperature modules to operate with standard and low melt adhesives	12

(1) Weight shown is for applicator only — does not include adhesive capacity. (2) Adhesive output will vary with conditions and the adhesive used. Values are approximate and are based on maximum steady-state flow. (3) Temperatures shown are nominal control values. Actual temperature will range slightly above and below this value.

Note: The technical information and data on these pages should be considered representative or typical only and should not be used for specification purposes.

## Accessories to improve your productivity



Tip No.	Description
9726	"T" Tip (shown with valve and adapter) for all 3M™ Applicators
9764	3/4" Slotted Spreader (3755LM adhesive only)
9777	1/4" Slotted Spreader (3755LM adhesive only)
9782	1/2" Slotted Spreader (3755LM adhesive only)
9727	"L" Tip (shown with adapter and valve) for all 3M™ Applicators
9916	3 Hole Spreader
9913	2 Hole Spreader (1/4" hole span)
9917	3 Hole 1" Spreader for 3M™ Applicator II only
9929	High Viscosity Valve (TC, EC, PG-II)
9946	.072" Brass Extension for 3M™ Applicators PG II and PG II LT only
9785	.070" Tapered Aluminum Extension for all 3M™ Applicators
9725	Mini Extension Tip .072" Opening for all 3M™ Applicators
9922	.063" Fluted Tip
9940	.125" Fluted Tip
9921	.090" Fluted Tip



**Heavy-Duty Benchstands** provide added convenience.

Foot pedal, magazine feeder, and benchmount accessories can provide high capacity, hands-free operation for 3M™ Scotch-Weld™ PG II and 3M™ Scotch-Weld™ PG II LT.

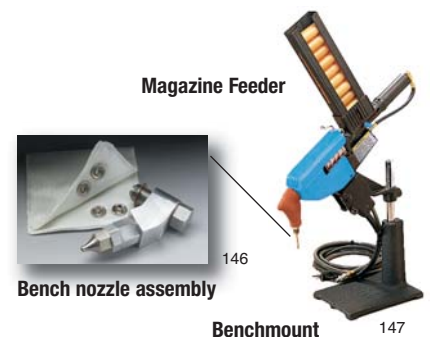
A general purpose tip (.090) is supplied with each 3M™ Scotch-Weld™ Applicator. To increase productivity, optional tips can provide multiple beads, flat ribbons, guided beads for carton sealing, and extended reach.



**Increase loading capacity** and ease of operation with Quadrack Converter and Palm Trigger.



**Foot Pedal**



**Magazine Feeder**

**Bench nozzle assembly**

**Benchmount**

3M™ Scotch-Weld™ Hot Melt Adhesives

	Product (Color)	FDA Listed <sup>1</sup>	UL 94 Listing	Features Application Ideas
Low Melt Technology: Applied 250°–270°F (127°–132°C)	3750LM Tan	N	N/A	<ul style="list-style-type: none"> <li>Excellent “<b>hot tack</b>”, fast setting for corrugated, beadboard, repack, recoup</li> <li><b>Economical, general purpose</b> • Use with <b>AE II LT</b> applicator only</li> </ul>
	3755LM Clear	Y	N/A	<ul style="list-style-type: none"> <li>“<b>Delayed-tack</b>” applied in <b>thin-glue-line</b> ribbon for paper, corrugated, chipboard, displays, exhibits</li> <li>Use with low melt applicator only</li> </ul>
	3762LM* Lt. Amber	Y	N/A	<ul style="list-style-type: none"> <li>Excellent “<b>hot tack</b>”, fast setting for corrugated, beadboard, recoupage, repacking chipboard, wood</li> <li><b>Economical, general purpose</b> • Use with low melt applicator only</li> </ul>
	3776LM Tan	N/A	N/A	<ul style="list-style-type: none"> <li>Bonds variety of <b>plastics, woods and light-gauge metals</b></li> <li>Use with low melt applicator only</li> </ul>
	3792LM* Clear	Y	V2	<ul style="list-style-type: none"> <li><b>Clear, multi-purpose</b> for wood, coated paper, <b>polyolefins</b> and other <b>heat-sensitive materials</b></li> <li>P.O.P. displays • Use with low melt applicator only</li> </ul>
	3798LM* Lt. yellow	Y	N/A	<ul style="list-style-type: none"> <li><b>Removable “gummy glue”</b> for many substrates</li> <li>Removes easily without residual tack • Use with low melt applicator only</li> </ul>
Hot Melt Technology: Applied 350°–385°F (177°–196°C)	3731* Tan	N	N/A	<ul style="list-style-type: none"> <li><b>High heat resistance</b></li> <li>Bonds <b>plastics</b> including <b>polyethylene, polypropylene</b></li> </ul>
	3738* Tan	Y	V2	<ul style="list-style-type: none"> <li><b>High delivery rate and long bonding range</b> • General purpose for foundry sand cores, wood bonding, corrugated, selected plastics and chipboard</li> </ul>
	3747 Tan	Y	N/A	<ul style="list-style-type: none"> <li><b>General purpose</b> for wide variety of plastics, wood and <b>lightweight metals</b></li> </ul>
	3748* Off-white	Y	V2	<ul style="list-style-type: none"> <li>Good thermal shock resistance • <b>Non-corrosive to copper</b> for many <b>electronic applications</b></li> <li>Bonds polyolefins</li> </ul>
	3748 VO Light Yellow	N	V0	<ul style="list-style-type: none"> <li><b>Self-extinguishing</b> version of 3748</li> <li>Meets UL 1410 requirements</li> </ul>
	3750 Tan	N	N/A	<ul style="list-style-type: none"> <li><b>Low viscosity</b> for high flow rate, increased production</li> <li><b>Good hot tack</b>, quick grab for <b>packaging</b> and <b>woodworking</b></li> </ul>
	3750 Clear	N	N/A	<ul style="list-style-type: none"> <li><b>Low viscosity</b> for high flow rate, increased production</li> <li><b>Good hot tack</b>, quick grab for <b>packaging</b> and <b>woodworking</b></li> </ul>
	3762 Tan	Y	V2	<ul style="list-style-type: none"> <li>Excellent “<b>hot tack</b>”, fast setting for corrugated, beadboard, recoupage, repacking chipboard, wood</li> <li><b>Economical, general purpose</b></li> </ul>
	3764* Clear	Y	V2	<ul style="list-style-type: none"> <li>Bonds variety of plastics including <b>polycarbonate, polyethylene, and polypropylene</b></li> <li>Flexible at low temperatures</li> </ul>
	3779* Amber	Y	V0	<ul style="list-style-type: none"> <li><b>High heat resistance</b> • High strength</li> <li>Good fuel and oil resistance • <b>Electronics</b></li> </ul>
	3789* Brown	Y	V2	<ul style="list-style-type: none"> <li><b>High performance for plastics</b> • Impact resistant</li> <li>Bonds vinyl and wood • <b>Good fuel and oil resistance</b></li> </ul>
	3792* Clear	Y	V2	<ul style="list-style-type: none"> <li><b>Clear, multi-purpose</b> for wood, corrugated, fabric, furniture, upholstery, novelties, and other lightweight materials</li> </ul>
	3796 Lt. Tan	N	N/A	<ul style="list-style-type: none"> <li>High performance for <b>plastics and light-gauge metals</b></li> </ul>
	3797 Off-white	Y	V2	<ul style="list-style-type: none"> <li>High ball and ring • Low viscosity</li> <li><b>Good for electrical potting</b></li> </ul>
Bulk Only	3794 Hi Tack PSA Lt. Tan	Y	N/A	<ul style="list-style-type: none"> <li><b>Sprayable</b> high tack PSA for bonding <b>plastic, paper, metals</b>, die-cut labels</li> </ul>
	6111 Tan	N	N/A	<ul style="list-style-type: none"> <li><b>Sprayable</b> 100% solventless adhesive for most foams, fabrics, plastics, particle board, and thin metal</li> </ul>
	6111 Green	N	N/A	<ul style="list-style-type: none"> <li>Same as 6111 tan but green in color.</li> </ul>
	6111HT Tan	N	N/A	<ul style="list-style-type: none"> <li>Similar to 6111 but has <b>higher heat resistance</b>.</li> </ul>
	6111HT Blue	N	N/A	<ul style="list-style-type: none"> <li>Similar to 6111 but has <b>higher heat resistance and blue in color</b>.</li> </ul>
	6116 Off-White	N	N/A	<ul style="list-style-type: none"> <li>Similar to 6111 but <b>lower than normal viscosity</b> and <b>mainly used on fabrics</b>.</li> </ul>

\* Also available in bulk. (1) Made from components listed as indirect food additives under FDA regulations for adhesives (21 CFR 175.105).

(2) Brookfield Thermosel Viscometer in Centipoise.

(3) ASTM E-28-6-7 (4) Temperature at which adhesive fails (5) On canvas (6) On Douglas Fir (7) 1/8" semicircular bead, Douglas Fir to Douglas Fir.



	Sizes	EC Temp Control Modules	Viscosity cps <sup>2</sup>	Delivery Time (sec) for 1" x 3" Cartridge	Ball & Ring Melt Point <sup>3</sup> (°F/°C)	Heat Resistance <sup>4</sup> (°F/°C)	Peel Strength PIW <sup>5</sup> 72°F (22°C)	Shear Strength PSI <sup>6</sup> 72°F (22°C)	Open Time 1/8" Bead (sec) <sup>7</sup>
	1/2" x 12"AE	N/A	4000 @250°F	45	200/95	128/54	6	475	25
	58" x 2"TC	N/A	13,000 @250°F	N/A	157/70	120/49	13	500	120
	58" x 8"Q 1" x 3"PG	58" x 2"TC 1/2" x 12"	4000 @250°F	45	205/96	130/54	6	480	25
	58" x 8"Q 1" x 3"PG	1/2" x 12"	8250 @250°F	47	184/84	140/60	9	600	40
	58" x 8"Q 1" x 3"PG	58" x 2"TC 1/2" x 12"	10,500 @250°F	57	178/81	140/60	13	350	40
	58" x 2"TC	N/A	9500 @250°F	N/A	191/88	120/49	N/A	N/A	30
	58" x 8"Q 1" x 3"PG	5	12,000 @375°F	N/A	315/157	265/130	22	490	30
	58" x 8"Q 1" x 3"PG	58" x 2"TC 1/2" x 12"AE	2875 @375°F	35	186/86	130/54	13	375	50
	58" x 8"Q 1" x 3"PG	58" x 2"TC 1/2" x 12"AE	4100 @375°F	45	220/104	145/63	20	430	45
	58" x 8"Q 1" x 3"PG	58" x 2"TC	5000 @375°F	65	292/144	175/79	18	250	45
	58" x 8"Q 1" x 3"PG	58" x 2"TC	5500 @375°F	65	305/152	175/79	15	275	30
	1/2" x 12"AE	N/A	1900 @375°F	30-40	200/93	125/52	6	500	N/A
	1/2" x 12"AE	N/A	4800 @375°F	35-45	178/81	135/57	12	250	N/A
	58" x 8"Q 1" x 3"PG	58" x 2"TC 1/2" x 12"AE	1870 @375°F	30	201/94	130/54	7	545	35
	58" x 8"Q 1" x 3"PG	58" x 2"TC 1/2" x 12"AE	6000 @375°F	55	190/88	140/60	14	390	40
	58" x 8"Q 1" x 3"PG	58" x 2"TC	7000 @375°F	75	325/163	300/149	18	700	25
	58" x 8"Q 1" x 3"PG	5	5200 @375°F	70	270/132	220/104	16	570	50
	58" x 8"Q 1" x 3"PG	58" x 2"TC 1/2" x 12"AE	5000 @375°F	45	179/81	140/60	13	250	50
	1" x 3"PG 58" x 2"TC	N/A	23,000 @375°F	120	240/116	200/93	29	550	40
	1" x 3"PG 58" x 2"TC	N/A	2650 @375°F	55	304/151	170/77	10	350	30
	2 lb. bricks	N/A	15,000 @325°F	N/A	224/107	120/49	16	N/A	> 60
	.75"x.75" chips	N/A	3,000-5,000 @375°F	N/A	284/140	145/63	34	N/A	1 surface 60 2 surface 360
	.75"x.75" chips	N/A	3,000-5,000 @375°F	N/A	284/140	145/63	34	N/A	1 surface 60 2 surface 360
	.75"x.75" chips	N/A	2,500-4,500 @375°F	N/A	224/107	175/79	26	N/A	1 surface 180 2 surface 480
	.75"x.75" chips	N/A	2,500-4,500 @375°F	N/A	224/107	175/79	26	N/A	1 surface 180 2 surface 480
	.75"x.75" chips	N/A	1,300 @375°F	N/A	199/93	160/69	20	N/A	1 surface 120 2 surface 300

N/A = Not available

Note: The technical information and data on these pages should be considered representative or typical only and should not be used for specification purposes.

# 3M™ Aerosol Adhesives

## At the touch of a finger – bonding power for substrates from paper to metal

3M aerosol adhesives go to the job and are always ready when needed. Only a finger's touch puts a job-matched formulation to work on paper, plastic, cardboard, foam, metal, and more.

3M introduced the first industrial-grade aerosol adhesive over 40 years ago, and now you can select from a wide range of performance and application characteristics for production and maintenance jobs. Most 3M aerosol adhesives also have a controlled spray pattern to help minimize overspray and cleanup.

3M aerosol adhesives contain no methylene chloride, chlorofluorocarbons (CFCs), or 1,1,1-trichloroethane (methyl chloroform), and most are California compliant.



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With pushbutton convenience, 3M™ Polystyrene Foam Insulation 78 Spray Adhesive targets spray for efficient use of adhesive in bonding foam board to concrete walls for thermal protection.



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With fast tack, long bonding range, and little or no soak-in, 3M™ Super 77™ Multipurpose Spray Adhesive is a versatile tool for bonding lightweight materials that include fabrics, plastics, soft foams, paper, cardboard, and thin gauge metals.



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3M™ Hi-Strength 90 Spray Adhesive typically bonds edge banding in 60 seconds compared to 15-20 minutes for many typical bulk contact adhesives. Strength increases to an ultimate 230 psi in shear and 25 piw in peel.



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3M™ Foam Fast 74 Spray Adhesive quickly bonds flexible urethane or latex foams to themselves and many other materials. Bond reaches foam-tearing strength with a soft, non-dimpling bond line.

3M™ Aerosols Adhesives		Net Weight (Oz.-Grams)	% Solids	Sq. Ft. Coverage @ 1 gram dry wt/sq.ft (per can) <sup>(1)</sup>	Spray Pattern	Bonding Range		Overlap Shear Strength <sup>(2)</sup> (PSI)	Peel Strength <sup>(3)</sup> (PIW)	Heat Resistance in °F <sup>(4)</sup>	CA Compliant <sup>(5)</sup>
Product	Features					One Surface	Two Surface				
Blue 72 Spray Adhesive	<ul style="list-style-type: none"> <li>• Repositionable with aggressive tack</li> <li>• Bond polyethylene film, foam and carpet</li> <li>• Blue</li> </ul>	17.33 - 490	15.1	74	Variable Web	1 min - 8 hrs	1 min - 1 wk	up to 100	11	170	Yes
Foam Fast 74 Spray Adhesive	<ul style="list-style-type: none"> <li>• Fast tack with foam-tearing strength</li> <li>• Soft non-dimpling glue line</li> <li>• Clear or Orange</li> </ul>	16.9 - 480	22	106	Variable Web	30 sec - 15 min	30 sec - 15 min	up to 300	9	180	Yes
Repositionable 75 Spray Adhesive	<ul style="list-style-type: none"> <li>• "Tape-like" PSA bonds</li> <li>• No bleeding, staining or wrinkling</li> <li>• Clear</li> </ul>	10.25 - 290	9.4	27	Mist	15 sec - 1 hr	15 sec - 3 hrs	up to 100	4	110	Yes
Hi-Tack 76 Spray Adhesive	<ul style="list-style-type: none"> <li>• Multi-purpose with high temperature resistance</li> <li>• Strong one-surface bonds</li> <li>• Clear</li> </ul>	18.1 - 515	13.5	70	Variable Web	2 min - 10 min	2 min - 1 hr	up to 300	10	230	Yes
Super 77™ Multipurpose Spray Adhesive	<ul style="list-style-type: none"> <li>• High coverage, low soak-in</li> <li>• Fast, aggressive tack for bonding many lightweight materials</li> <li>• Clear</li> </ul>	16.75 - 475	25	119	Mist	15 sec - 15 min	15 sec - 30 min	up to 300	5	150	Yes
Polystyrene Foam Insulation 78 Spray Adhesive	<ul style="list-style-type: none"> <li>• Bonds most insulation, including expanded polystyrene and extruded polystyrene</li> <li>• Will not attack foam board • Clear</li> </ul>	17.9 - 508	19.1	97	Variable Web	1 min - 5 min	1 min - 15 min	up to 300	7	190	Yes
Rubber & Vinyl 80 Spray Adhesive	<ul style="list-style-type: none"> <li>• Neoprene-based contact adhesive with plasticizer resistance</li> <li>• Bonds supported vinyl, leather, most rubber, most plastics, laminate and wood • Yellow</li> </ul>	19 - 539	12.9	70	Web	NR	3 min - 30 min	up to 600	16	300	Yes

Note: The technical information and data on these pages should be considered representative or typical only and should not be used for specification purposes.

3M™ Aerosols Adhesives (cont.)		Net Weight (Oz.-Grams)	% Solids	Sq. Ft. Coverage @ 1 gram dry wt/sq.ft (per can) <sup>(1)</sup>	Spray Pattern	Bonding Range		Overlap Shear Strength <sup>(2)</sup> (PSI)	Peel Strength <sup>(3)</sup> (PIW)	Heat Resistance in °F <sup>(4)</sup>	CA Compliant <sup>(5)</sup>
Product	Features					One Surface	Two Surface				
Hi-Strength 90 Spray Adhesive	• Fast, high performance contact bond strength • Adheres wood, high pressure laminate, metal, polyethylene, polypropylene and more • Translucent	17.6 - 500	13	65	Variable Web	NR	1 min - 10 min	up to 600	13	250	Yes
Hi-Strength 94 Woodworking Laminate Spray Adhesive	• High strength wood to laminate bonding • Clear	14.8 - 420	18	76	Variable Web	NR	1 min - 30 min	up to 300	25	240	Yes
Industrial Spray Adhesive	• General purpose adhesive for bonding many lightweight materials • Clear	15.3 - 433	21.1	91	Mist	15 sec - 5 min	15 sec - 10 min	up to 100	4	150	Yes

(1) 1 g/sq ft of adhesive coverage may not be enough for a some products. Higher strength applications may need as much as 2.5 grams dry wt/sq ft. Convert sq ft coverage by dividing by 2.5.

(2) Testing based on ASTM D3163 with birch plywood, 1 inch overlap, 1.5 - 2.5 gm/sq.ft (dry adhesive wt.)

(3) Testing based on ASTM D1876-01 with coated canvas, pulled at 12 in/mn.

(4) SAFT Shear Adhesion Failure Test with birch plywood, 1 inch overlap, 100 grams used, temperature start at 90F and ramped 10F every 10 mn. until complete failure.

(5) California Compliant per California Air Resources Board Consumer Product Rules for Aerosol Adhesives

NR = Not Recommended

3M™ Specialty Aerosol Adhesives		Net Weight (Oz.-Grams)	% Solids	Sq. Ft. Coverage @ 1 gram dry wt/sq.ft (per can) <sup>(1)</sup>	Spray Pattern	Bonding Range		CA Compliant <sup>(2)</sup>
Product	Features					One Surface	Two Surface	
Case Sealing Adhesive	• Convenient for shipping room carton closure and warehouse reclosure after inspection • High heat resistance • Clear	17.33 - 490	14.3	70	Variable Web	NR	1 min - 15 min	Yes
Palletizing Adhesive	• Nearly immediate tack permits bags to be stacked on pallets without slipping • Easy separation after shipment • Clear	16.75 - 475	25	119	Mist	15 sec - 10 min	NR	Yes
Dry Lay-Up Adhesive	• Fast, aggressive tack for bonding many lightweight materials • Versatile adhesive can be used on typical infusion materials: fiberglass fabrics, balsa and foam coring, flow media and peel ply • Red	16.5 - 467	25	117	Mist	15 sec - 15 min	NR	No
Vac-U-Mount Spray Adhesive 6096	• Permanently mounts pictures, photos and other lightweight materials • pH neutral • Clear	15.9 - 450	15.1	68	Mist	NR	1 min - 5 min	Yes

(1) 1 g/sq ft of adhesive coverage may not be enough for a some products. Higher strength applications may need as much as 2.5 grams dry wt/sq ft. Convert sq ft coverage by dividing by 2.5.

(2) California Compliant per California Air Resources Board Consumer Product Rules for Aerosol Adhesives NR = Not Recommended

3M™ Aerosols and Cylinders in Bulk		Size	% Solids	Sq. Ft. Coverage @ 1 gram dry (per gallon)	SCAQMD Rule 1168 Compliant
Product	Features				
Fastbond™ Contact Adhesive 30NF	• GREENGUARD™ Certified, water-based • High strength, bonds particle board, plywood, plastic laminate, fabric and more • Green or Neutral	Quart through 270 gal. Tote*	50	2,066	Yes
General Purpose 60 CA	• Very high coverage • Temporary and permanent bonds • Clear	5 gal., 54 gal.	43	1,581	Yes
Super 77™	• High coverage, low soak-in for long lasting bonds • High temperature resistance • Clear and Red	5 gal., 52 gal.	37	1,092	No
Polystyrene Foam Insulation 78	• Bonds most insulation, including expanded polystyrene and extruded polystyrene • Will not attack foam board • Clear	5 gal.	35	1,049	No
Hi-Strength 90	• Fast, high performance contact bond strength • Adheres wood, high pressure laminate, metal, polyethylene, polypropylene and more • Clear	5 gal., 52 gal.	23	679	No
Hi-Strength Laminating 92	• High coverage • Clear or Red	5 gal., 54 gal.	34.4	1,109	No
Hi-Strength Postforming 94 CA	• High coverage • Clear or Red	5 gal., 54 gal.	34	1,235	Yes
Adhesive Remover	• Ideal for removal of adhesive residue or for surface preparation • Solvent-free • Also removes heavy oils, grease, silicone, tar and grime • Pale Yellow	1 gal., 5 gal., 52 gal.	NA	NA	No

\* Refer to Non-Structural Adhesives, Contact Adhesives, for additional information.

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## 3M™ Cleaners and Lubricants

### Convenience and a fistful of work power for maintenance and production

In thousands of factories and plants, these aerosol chemicals are proven daily to save time and effort in maintenance and production. Lubricating, cleaning, inhibiting rust, and other tough jobs become finger-touch easy.

Compact container fits in a tool box to go readily to any job site and can help you reduce storage space and cost. With targeted application you get more useable product for your money.

3M aerosol chemicals contain no methylene chloride, chlorofluorocarbons (CFCs), or 1,1,1-trichloroethane (methyl chloroform).



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3M™ Silicone Lubricant lubricates cutting tools and tables. Fast, easy application helps prevent buildup of adhesive, wax, inks, and paints. Won't stain or become gummy.



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For fast, easy cleanup of gears, 3M™ Citrus Base Cleaner helps soften and loosen grease, oil and grime. After using this heavy-duty degreaser/cleaner, just wipe away with a shop towel.



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Freeing rusted nuts, bolts, and frozen threaded parts are only a few of the many applications for 3M™ 5-Way Penetrant.

### 3M™ Aerosol Chemicals

Product	Description	Temperature Resistance
Silicone Lubricant	<ul style="list-style-type: none"> <li>Lubricates cutting tools and tables</li> <li>Helps prevent buildup of glues, wax, inks, paints</li> <li>Won't stain or become gummy</li> <li>FDA listed ingredients*</li> </ul>	350°F (177°C)
5-Way Penetrant	<ul style="list-style-type: none"> <li>Penetrates, lubricates, demoisturizes, cleans and helps prevent rust</li> <li>Frees rusted, frozen nuts</li> <li>"Dries out" electrical apparatus</li> <li>Inhibits corrosion and pitting of molding dies and extension screws</li> </ul>	N/A
Citrus Base Cleaner	<ul style="list-style-type: none"> <li>Multi-purpose, citrus-scented cleaner removes grease, dirt, oil and adhesive overspray from equipment</li> <li>Softens liquid adhesive and tape residue</li> </ul>	N/A
Adhesive Remover	<ul style="list-style-type: none"> <li>Specifically formulated to remove adhesive from many substrates with no residue</li> <li>Citrus-scented</li> <li>Also available in bulk (55, 5, and 1 gallon)</li> </ul>	N/A
Sticker and Marker Remover	<ul style="list-style-type: none"> <li>Same as aerosol Adhesive Remover but more precise application with pen tip</li> </ul>	N/A
Multi-Surface Wipes	<ul style="list-style-type: none"> <li>Convenient, pre-moistened, pleasant scent</li> <li>Large, thick and durable for cleaning with little effort</li> <li>No need to rinse or wash hands after use</li> </ul>	N/A

\*FDA Listed Ingredients: The ingredients of this product, when dried after application, are listed as indirect food contact additives when used with minimal opportunity for exposure. See 21 CFR 178.3570, 178.3910, and 181.28

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# 3M™ Concrete Repair Products

## Fast, convenient crack and spall repair, expansion joints, custom threading and anchoring, and more

3M™ Concrete Repair Products offer a complete line of conveniently packaged and dispensed adhesives/sealants for every job from cracks and joints to spalls and more.

Repairs are long lasting with strong, flexible bonds that resist weathering, expansion, and contraction.

Fast setting allows you and your customers to drive on repaired surfaces in as few as five minutes. You can choose non-sag or self-leveling formulations for repairs on both vertical and horizontal surfaces. Non-sag formulation facilitates step and ledge repair.



50ml and 12 fl. oz. duo-pak cartridges, 5-gallon pails, and 55 gallon drums are available to meet your production volume requirements. Nozzle automatically and precisely meters, mixes, and dispenses two-part urethane formulation. Apply material precisely where needed to conserve material.

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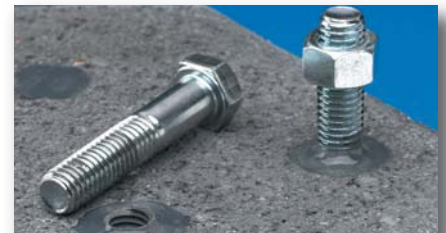
Self-leveling 3M™ Concrete Repair 600 flows smoothly into cleaned cracks and gaps and hardens in as little as 5 minutes.

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Make fast work of lengthy expansion or control joints and other larger jobs with the heavy-duty manual applicator and 12 fl. oz. duo-pak cartridges.

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3M concrete repair formulations harden to any depth without cracking for custom threading and anchoring.

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## 3M™ Concrete Repair Products

Product/Color	Size	Description	Work life	Handling time	Cure time
DP600 Gray Self-leveling	12 fl. oz.*	• Repair of cracks or spalls and setting anchors in floors or horizontal surfaces	70 sec.	5 min.	1 hr.
DP600 Gray Non-sag	12 fl. oz.*	• Repair of cracks in walls and setting anchors in vertical surfaces • Repair chipped or broken steps and ledges	50 sec.	4 min.	1 hr.
Concrete Repair 600 Gray Self-leveling	8.4 fl. oz.	• Flows smoothly into cleaned cracks and gaps • Hardens in as little as 5 minutes • Use in common caulking guns	70 sec.	5 min.	60 min.
DP5105 Gray**	12 fl. oz.*	• Helps seal and stress-relieve large concrete areas	5 min.	9 hrs.	24 hr.
DP5106 Gray	12 fl. oz.*	• Helps relieve stress in large segments of concrete floors	6 min.	40 min.	24 hr.
Manual Dispenser 6997-1	12 fl. oz.	• Heavy-duty applicator	-	-	-
Pneumatic Dispenser 6985-1	12 fl. oz.	• Applicator for high volume jobs	-	-	-
Blunt End Mix Tip 4901	12 fl. oz.	• General use tip	-	-	-
Tapered Mix Tip 4902	12 fl. oz.	• Fine or precise placement of adhesive and sealant	-	-	-
Mixing Nozzle	8.4 fl. oz.	• Mixes 600	-	-	-

\*Also available in 50 ml cartridges, 5 gallon pails and 55 gallon drums \*\*Also available in black (56623-3) and beige (96334-6)

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# 3M™ Sealants

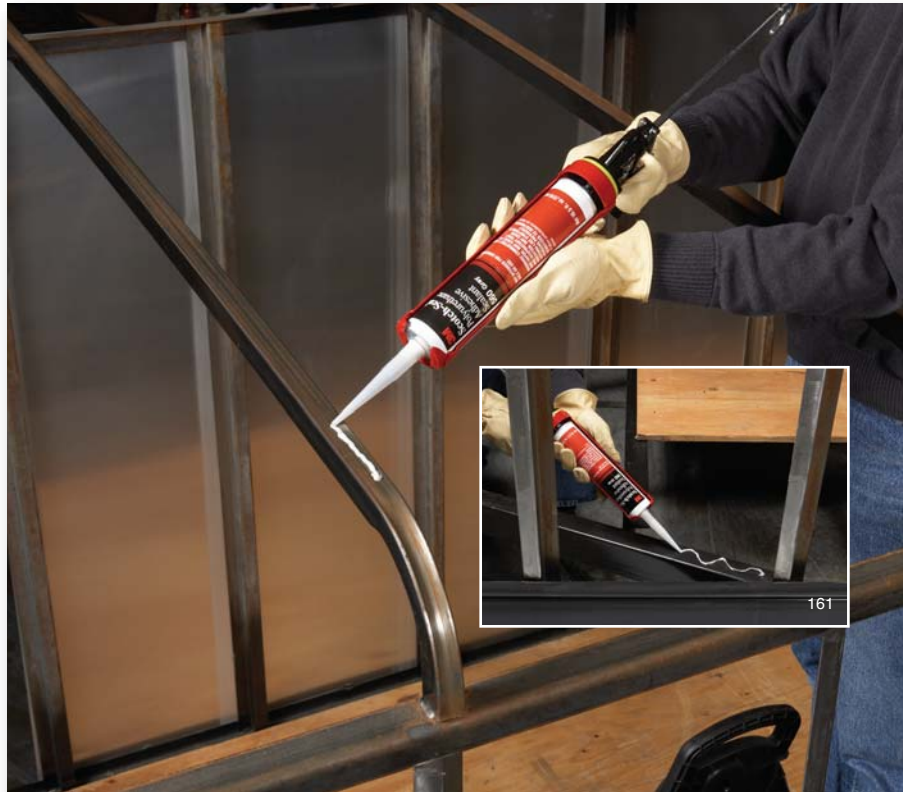
## Solutions for the elements from windows to ductwork

The elements – air, wind, water, dirt, sunlight, fuel, cold, heat – keeping them in or out is a design challenge for applications such as vehicle windows, trailer seams, HVAC ductwork, wood doors, boat deck fittings, and many more. With 3M™ Sealants, you have a wide selection of solutions based on more than 50 years of development and innovation.

As you can see on these pages, you'll find the 3M name on formulations from acrylic to urethane and forms from liquids to solids for manual or pneumatic application.

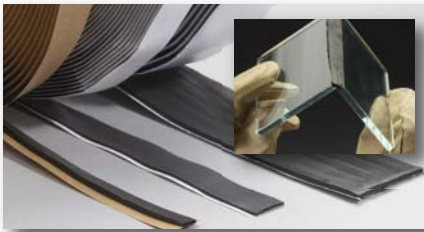


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From trailer roof to floor, polyurethane 3M™ Scotch-Seal™ Adhesive Sealant 560 moisture cures rapidly to a flexible seal/bond between exterior skins and metal framework, and wood flooring and framework. Tensile strength of up to 580 psi is enough to replace mechanical fasteners in many situations.



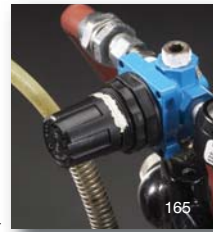
163

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



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3M™ Marine Adhesive Sealant 5200 Fast Cure cures completely in only 24 hours to a strong flexible seal for applications above or below the waterline such as hull and stern joints, hull to deck seams, marine hardware and more.



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To indicate that a valve setting is not to be changed and to know if it has, 3M™ Scotch-Seal™ Tamper-indicating Sealant 1252 clearly communicates before and after tampering.



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To seal vertical cracks in concrete walls, 3M™ Scotch-Weld™ Sealant DP5003NS is a two-part non-sagging urethane that flows to fill the space but but resists gravity to stay in place during application and long after.

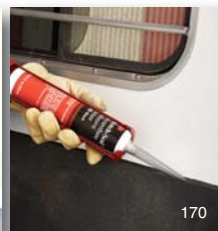


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For ductwork seam sealing with 3M™ Scotch-Seal™ Sealant 540, a bead cures in about 24 hours to keep air and dust in or out. Flexible polyurethane resists vibration to hold tight.



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For gaps and seams outside and inside of a trailer, 3M™ Scotch-Seal™ Sealant 540 stays flexible and secure at -40° to 194°F (-40° to 90°C) compensating for thermal expansion/contraction even between dissimilar surfaces.

### 3M™ Sealants

Product	Descriptions	Solids Weight (Approx.)	Flash Point (Closed Cup)	Consistency	Color (Dry)	Application Method	Cure or Dry Time	Service Temperature Range	
3M™ Scotch-Seal™ Sealants	540	<ul style="list-style-type: none"> <li>Polyurethane</li> <li>Moisture cures rapidly to flexible seal for many plastics, metal, wood, and more</li> <li>250 psi tensile strength</li> </ul>	90%	136°F (58°C)	Mastic	Black, Gray, White	Hand or pressure caulk	24 hours (3/16" dia. bead)	-40° to 194°F (-40° to 90°C)
	560	<ul style="list-style-type: none"> <li>Similar to 540 but with 580 psi tensile strength for sealing and bonding</li> <li>May replace mechanical fasteners</li> </ul>	90%	136°F (58°C)	Mastic	Black, Gray	Hand or pressure caulk	24 hours (3/16" dia. bead)	-40° to 194°F (-40° to 90°C)
	800	<ul style="list-style-type: none"> <li>Flexible, rubbery</li> <li>Resists weather, water, oils, fuel, detergent</li> </ul>	51.5%	20°F (-7°C)	Heavy liquid	Reddish brown	Brush or flow	1-3 days	-65° to 200°F (-54° to 93°C)
	900	<ul style="list-style-type: none"> <li>Firm, rubbery with gap filling properties</li> <li>Economical for HVAC ducts</li> </ul>	66%	1°F (-17°C)	Mastic	Gray	Hand or pressure caulk	1-2 days	0° to 180°F (-18° to 82°C)
	1252	<ul style="list-style-type: none"> <li>Tamper-indicating</li> <li>Fire-retardant seal</li> <li>Resists oil, gasoline, water, jet fuel, fungus</li> <li>Tack free in 20 seconds</li> </ul>	70%	20°F (-7°C)	Thin paste	White	Pressure flow gun	24 hours (1/8" dia. bead)	-20° to 250°F (-29° to 121°C)
	2084	<ul style="list-style-type: none"> <li>Seals metal to glass in windows and doors</li> <li>Resists weather, water, oil and gasoline</li> </ul>	46%	0°F (-18°C)	Heavy liquid	Aluminum	Brush or flow	24 hours (1/8" dia. bead)	-30° to 250°F (-34° to 121°C)
3M™ Scotch-Weld™ Sealants	DP5001	<ul style="list-style-type: none"> <li>Fast cure urethane</li> <li>Flexible belt repair</li> </ul>	100%	>290°F (143°C)	2-part liquid	Black	Manual or pneumatic dispenser	12 hours	-60° to 250°F (-51° to 121°C)
	DP5003NS	<ul style="list-style-type: none"> <li>Controlled flow urethane for vertical applications</li> <li>Flexible seal</li> </ul>	100%	>290°F (143°C)	2-part paste	Black	Manual or pneumatic dispenser	24 hours	-60° to 250°F (-51° to 121°C)
3M™ Weatherban™ Sealants	606NF	<ul style="list-style-type: none"> <li>Smooth, weather resistant acrylic for metal, wood, painted or primed surfaces</li> <li>Skins over in 20-40 minutes</li> </ul>	78%	None	Non-stringing pumpable paste	White	Hand or pressure caulk	7 days (1/4" dia. bead)	-20° to 180°F (-29° to 82°C)
	5354	<ul style="list-style-type: none"> <li>High tack butyl adheres aggressively</li> <li>Easy to compress tape, resists cold flow</li> </ul>	100%	None	Solid tape	Black	Apply by hand	Non-drying or curing	-65° to 190°F (-54° to 88°C)
	PF5422	<ul style="list-style-type: none"> <li>Thread reinforced butyl tape</li> <li>Repositionable with virtually no cleanup</li> <li>Weather resistant</li> </ul>	100%	None	Solid tape	Black	Apply by hand	Non-drying or curing	-40° to 200°F (-40° to 93°C)
	PF5423	<ul style="list-style-type: none"> <li>Nonreinforced thinner product similar to PF5422</li> </ul>	100%	None	Solid tape	Black	Apply by hand	Non-drying or curing	-40° to 200°F (-40° to 93°C)
3M™ Marine Sealants	101	<ul style="list-style-type: none"> <li>High quality polysulfide bedding sealant</li> <li>Chemically cures</li> <li>Firm, rubbery watertight seal</li> <li>Resistant to chemicals, weathering, saltwater and joint movement</li> <li>Removable</li> </ul>	98%	–	Medium paste	White	Hand or pressure caulk	2-3 weeks	–
	4000UV FC	<ul style="list-style-type: none"> <li>One part polyurethane</li> <li>Seals above/below waterline</li> <li>Superior UV resistance</li> <li>Tack free in 22 minutes</li> </ul>	100%	–	Medium Paste	White, Black	Hand or pressure caulk	24-48 hours (1/8" dia. bead)	-40° to 190°F (-40° to 88°C)
	4200 FC	<ul style="list-style-type: none"> <li>One part polyurethane</li> <li>Seals above/below waterline</li> <li>Creates strong, flexible bonds</li> <li>Tack free in 1 hour</li> </ul>	100%	–	Non-sagging paste	White, Black	Hand or pressure caulk	24-48 hours (1/8" dia. bead)	-40° to 190°F (-40° to 88°C)
	5200	<ul style="list-style-type: none"> <li>One part polyurethane</li> <li>Excellent adhesion to wood, gelcoat, fiberglass</li> <li>Seals above/below waterline</li> <li>Long working time</li> </ul>	97%	–	Medium Paste	White, Black, Tan, Mahogany	Hand or pressure caulk	7-14 days (1/8" dia. bead)	-40° to 190°F (-40° to 88°C)
	5200FC	<ul style="list-style-type: none"> <li>One part polyurethane</li> <li>High-strength, non-shrinking, non-sagging bonds</li> <li>Seals above/below waterline</li> <li>Up to one hour open time</li> </ul>	97%	–	Medium Paste	White	Hand or pressure caulk	24-48 hours (1/8" dia. bead)	-40° to 190°F (-40° to 88°C)

Note: The technical information and data on these pages should be considered representative or typical only and should not be used for specification purposes.

# Adhesive/Substrate Selection Guide

## Using this Guide

This guide can be used to assist in choosing a product or products to evaluate for a given application. The substrates that may be involved are listed in the first column. The 3M products that you may want to evaluate are grouped by type in the next seven

columns. For example, you want to bond metal to ceramic and have structural strength. First, select the substrate heading “Metal to:”, shown in the dark green area upper left of page 49. Then move down four lines to “Glass and Ceramics” and look

across the columns under the heading “Structurals”. There are candidate products in this example, available in the 3M™ Scotch-Weld™ Epoxy, Acrylic, Urethane Adhesives column.

Wood and Hardboard to:	Structurals				Non-Structurals		
	3M™ Scotch-Weld™ Epoxy, Acrylic, Urethane Adhesives	3M™ Scotch-Weld™ Instant Adhesives	3M™ Scotch-Weld™ Polyurethane Reactive (PUR) Adhesives	3M™ Scotch-Weld™ Polyurethane Reactive (PUR) Easy Adhesives	3M™ Scotch-Weld™ and Fastbond™ Adhesives	3M™ Aerosol Adhesives	3M™ Scotch-Weld™ Hot Melt Adhesives
<b>Wood and Hardboard</b>	2-Part Epoxies and Urethanes	CA50, CA100	TE015, TE100, TE030, EZ250015, EZ250060, EZ250120	17005, 17030	F/B 30NF, 1357 (All), 4323, F/B 2000NF	80, 90	3738, 3747, 3776LM, 3789, 3762LM, 3792LM, 3750LM
<b>Metal</b>	Flexible 2-Part Epoxies, 2-Part Urethanes	CA50, CA100	TS115, TS230, TE040, EZ250150	17010, 17060	1357 (All), 5, 10, F/B 2000NF	80, 90	3747, 3776LM, 3796,
<b>Rubber (except EPDM)</b>	Flexible 2-Part Epoxies, 2-Part Urethanes	CA50, CA100	TS115, TS230, TE040, EZ250150	17030, 17060	1357 (All), 1300 (All), 2141, F/B 2000NF	80, 90*	3747, 3796
<b>EPDM Rubber</b>	–	CA40 <sup>1</sup> , CA40H	–	–	4799	–	–
<b>Glass and Ceramics</b>	Flexible 2-Part Epoxies	CA50, CA100	TS115, TS230, TE040, EZ250150	17010, 17060	1357 (All), 1300 (All), 2141	80, 90*	3747, 3796, 3764, 3792LM
<b>Leather</b>	Flexible 2-Part Epoxies, 2-Part Urethanes	CA50, CA100	TE015, TE100, TE031, TS230, EZ250060, EZ250150	17010, 17060	847 (All), F/B 30NF, F/B 2000NF	80, 90	3789, 3779, 3769
<b>Plastics (Polyolefins)</b>	DP8005, DP8010	–	–	–	4693	72, 76, 90	3748, 3764, 3731, 3792LM, 6111 <sup>1</sup>
<b>Plastics (ABS, PVC, Acrylic, etc.)</b>	Flexible, 2-Part Epoxies 2-Part Urethanes	–	TE031, TS230, TS115, TE040, EZ250030, EZ250150	17010, 17060	4693, 1099 (All),	76, 77, 80, 90	3748, 3764, 3747, 3792LM 3776LM
<b>Plastics (High Performance-Nylon)</b>	DP460 DP190	CA50, CA100	All Products	All Products	1099 (All), 4693	76, 77, 80, 90	3796
<b>Plastics (Flexible Vinyl)</b>	Flexible 2-Part Epoxies	CA50, CA100	TE100, EZ250060, EZ250150	–	1099 (All), 2262, 4475, F/B 2000NF	80	3789, 3796
<b>Paper and Cardboard</b>	2-Part Epoxies and Urethanes	–	All Products	All Products	F/B 30NF, F/B 100, 4550, F/B 2000NF	75*, 77	3762LM, 3762, 3750 3792, 3792LM, 3755LM, 6111 <sup>1</sup> , 3750LM, 3738
<b>Fabric, Felt, Cork and Fibrous Glass</b>	2-Part Epoxies and Urethanes	–	All Products	All Products	4550, F/B 49, F/B 2000NF	74, 75*, 76, 77, 80, 90	3738, 3747, 3776LM, 3792LM, 6111 <sup>1</sup>
<b>Flexible Foam (Latex, Urethane)</b>	2-Part Urethanes	–	All Products	All Products	F/B 100, F/B 2000NF	74, 76, 90	3738, 3747, 3764, 3792LM, 6111 <sup>1</sup>
<b>Rigid Foam (Beadboard, Styrene)</b>	2-Part Urethanes, Flexible 2-Part Epoxies	–	All Products	All Products	F/B 30NF, F/B 2000NF, F/B 49	78	3762LM, 3792LM, 3750LM, 3755LM, 6111 <sup>1</sup>
<b>Rigid Foam (Urethane)</b>	2-Part Urethanes, Flexible 2-Part Epoxies	–	All Products	All Products	F/B 30NF, 1357(All), 5, F/B 2000NF	74, 80	3747, 3764, 3792, 3776LM, 6111 Family

<sup>1</sup> 6111 is a family of products that includes 6111, 6111HT, and 6111. <sup>2</sup> Evaluate using surface activator.

Note: The technical information and data on these pages should be considered representative or typical only and should not be used for specification purposes. Final product selection should be made only after consideration of a variety of factors and evaluation of sample bonds.



Metal to:	Structurals				Non-Structurals		
	3M™ Scotch-Weld™ Epoxy, Acrylic, Urethane Adhesives	3M™ Scotch-Weld™ Instant Adhesives	3M™ Scotch-Weld™ Polyurethane Reactive (PUR) Adhesives	3M™ Scotch-Weld™ Polyurethane Reactive (PUR) Easy Adhesives	3M™ Scotch-Weld™ and Fastbond™ Adhesives	3M™ Aerosol Adhesives	3M™ Scotch-Weld™ Hot Melt Adhesives
<b>Metal</b>	Acrylics, Epoxies	CA's All Products	–	–	1357 (All), 1099 (All), 1300 (All)	80, 90	3747 <sup>(1)</sup> , 3796, 3776LM <sup>(2)</sup>
<b>EPDM Rubber</b>	–	CA40, CA40H	–	–	4799	–	–
<b>Rubber (except EPDM)</b>	Flexible 2-Part Epoxies	CA's All Products	TS115, TS230, TE040, EZ250150	17030, 17060	2141, 1300 (All), 847 (All), F/B 2000NF <sup>(1)</sup>	80, 90*	3747, 3796, 6111 HT
<b>Glass and Ceramics</b>	Flexible 2-Part Epoxies	–	–	–	1357 (All)	80, 90, 3796	3747, 3796, 3776LM
<b>Leather</b>	Flexible 2-Part Epoxies 2-Part Urethanes	CA50, CA100	TS115, TS230, TE040, EZ250150	17010, 17060, 17030	847 (All), F/B 2000NF	80	3796
<b>Plastics (Polyolefins)</b>	DP8005, DP8010	–	–	–	4693, F/B 2000NF <sup>(1)</sup>	72, 76, 90	3796
<b>Plastics (ABS, PVC, Acrylic, etc.)</b>	Flexible 2-Part Epoxies, Acrylics	CA's All Products	TS115, TS230, TE040, EZ250150	17010, 17060	4693, 4475, 1357 (All), F/B 2000NF <sup>(1)</sup>	76, 77, 80, 90	3747, 3776LM, 3796
<b>Plastics (High Performance-Nylon)</b>	DP460, DP190	CA's All Products	–	–	1099 (All), 4693	76, 77, 80, 90	3796
<b>Plastics (Flexible Vinyl)</b>	Flexible 2-Part Epoxies	CA40, CA40H, CA50, CA100	TS115, TS230, TE040, EZ250150	17010, 17060	1099 (All), 2262, 4475	80	3789, 3796
<b>Paper and Cardboard</b>	2-Part Epoxies, 2-Part Urethanes	–	TS115, TS230, TE040, EZ250150	17010, 17060	10, F/B 49, F/B 100, 4550, F/B 2000NF	75*, 77	3747, 3776LM, 3796
<b>Fabric, Felt, Cork and Fibrous Glass</b>	2-Part Epoxies	–	TS115, TS230, TE040, EZ250150	17010, 17060	F/B 100, 4550, F/B 49, F/B 2000NF	72, 74, 75*, 76, 77, 80, 90	3747, 3776LM, 3796
<b>Flexible Foam (Latex, Urethane)</b>	2-Part Urethanes	–	TS115, TS230, TE040, EZ250150	17010, 17060	F/B 2000NF, F/B 100	74, 76, 90	3747, 3796, 3776LM
<b>Rigid Foam (Beadboard, Styrene)</b>	Flexible 2-Part Epoxies	–	TS115, TS230, TE040, EZ250150	17010, 17060	F/B 30NF, F/B 2000NF <sup>(1)</sup> , F/B 49	78	3776LM
<b>Rigid Foam (Urethane)</b>	Flexible 2-Part Epoxies	CA's All Products	TS115, TS230, TE040, EZ250150	17010, 17060	1357(All), 5, 10, F/B 2000NF <sup>(1)</sup>	74, 80	3747, 3796, 3776LM, 6111
<b>Rubber (except EPDM) to:</b>							
<b>Rubber (except EPDM)</b>	Flexible 2-Part Epoxies, 2-Part Urethanes	CA's All Products	TS115, TS230, TE031, TE040, EZ250030, EZ250150	17030, 17060	2141, 1300 (All), 847 (All)	80, 90*	3747, 3796
<b>EPDM Rubber</b>	–	CA40, CA40H	–	–	4799	–	3796
<b>Glass and Ceramics</b>	Flexible 2-Part Epoxies	–	TS115, TS230, TE040, EZ250150	17010, 17060	1300 (All), 2141	80, 90	3747, 3796
<b>Leather</b>	Flexible 2-Part Epoxies, 2-Part Urethanes	CA50, CA100	TS115, TS230, TE031, TE040, EZ250150	All Products	847 (All), 2141, 1300, F/B 2000NF	80	3796
<b>Plastics (Polyolefins)</b>	DP8005, DP8010	–	–	–	4693	90	3796, 6111 Family
<b>Plastics (ABS, PVC, Acrylic, etc.)</b>	Flexible 2-Part Epoxies, 2-Part Urethanes	CA's All Products	TE031, TS230, TS115, TE040, EZ250030, EZ250150	17010, 17060	1099 (All), 847 (All), 1300 (All)	80, 90	3747, 3796
<b>Plastics (High Performance Nylon)</b>	DP460, DP190	CA's All Products	–	–	1099 (All)	80, 90	3796
<b>Plastics (Flexible Vinyl)</b>	Flexible 2-Part Epoxies	CA40, CA40H, CA50, CA100	TS115, TS230, TE031, TE040, EZ250150	All Products	1099 (All)	80	3796

Note: The technical information and data on these pages should be considered representative or typical only and should not be used for specification purposes. Final product selection should be made only after consideration of a variety of factors and evaluation of sample bonds. \* Produces a temporary bond on these materials.

(1) Adhesives *must* be forced dried and bonded while warm.

(2) For best results, preheat the substrate to a minimum of 120°F (49°C).

Rubber (except EPDM) to:	Structurals				Non-Structurals		
	3M™ Scotch-Weld™ Epoxy, Acrylic, Urethane Adhesives	3M™ Scotch-Weld™ Instant Adhesives	3M™ Scotch-Weld™ Polyurethane Reactive (PUR) Adhesives	3M™ Scotch-Weld™ Polyurethane Reactive (PUR) Easy Adhesives	3M™ Scotch-Weld™ and Fastbond™ Adhesives	3M™ Aerosol Adhesives	3M™ Scotch-Weld™ Hot Melt Adhesives
<b>Paper and Cardboard</b>	Flexible 2-Part Epoxies, 2-Part Urethanes	–	TS115, TS230, TE040, EZ250030, EZ250150	All Products	1300 (All), 2141, F/B 2000NF, F/B 100	75*, 77	3747, 3796, 6111 Family
<b>Fabric, Felt, Cork and Fibrous Glass</b>	2-Part Urethanes	–	TS115, TS230, TE040, EZ250030, EZ250150	All Products	847, 1300 (All), 2141, F/B 2000NF	80, 90	3747, 3796, 6111, 3794
<b>Flexible Foam (Latex, Urethane)</b>	–	–	TS115, TS230, TE040, EZ250030, EZ250150	All Products	F/B 2000NF, F/B 100	74, 80	3747, 3796
<b>Rigid Foam (Beadboard, Styrene)</b>	Flexible 2-Part Epoxies, 2-Part Urethanes	–	TS115, TS230, TE040, EZ250030, EZ250150	All Products	F/B 2000NF	–	3794
<b>Rigid Foam (Urethane)</b>	2-Part Urethanes	–	TS115, TS230, TE040, EZ250030, EZ250150	All Products	1300 (All), 1357(All), 2141	74, 80	3747, 3796
<b>EPDM Rubber to:</b>							
<b>EPDM Rubber</b>	–	CA40, CA40H	–	–	4799	–	3796
<b>Glass and Ceramics</b>	–	–	–	–	4799	–	3796
<b>Leather</b>	–	–	–	–	–	–	3796
<b>Plastics (Polyolefins)</b>	–	–	–	–	–	–	3796
<b>Plastics (ABS, PVC, Acrylic, etc.)</b>	–	CA40, CA40H	–	–	4799	–	3796
<b>Plastics (High Performance-Nylon)</b>	–	CA40, CA40H	–	–	4799	–	–
<b>Plastics (Flexible Vinyl)</b>	–	CA40, CA40H	–	–	–	–	–
<b>Paper and Cardboard</b>	–	–	–	–	4799	–	3796
<b>Fabric, Felt, Cork and Fibrous Glass</b>	–	–	–	–	4799	–	3796
<b>Flexible Foam (Latex, Urethane)</b>	–	–	–	–	–	–	3796
<b>Rigid Foam (Beadboard, Styrene)</b>	–	–	–	–	–	–	–
<b>Rigid Foam (Urethane)</b>	–	–	–	–	4799	–	3796
<b>Glass &amp; Ceramics to:</b>							
<b>Glass and Ceramics</b>	Flexible 2-Part Epoxies	–	–	–	4475	80, 90	3747, 3764, 3796, 3792LM
<b>Leather</b>	Flexible 2-Part Epoxies, 2-Part Urethanes	–	TS115, TS230, TE040, EZ250150	17010, 17060	847 (All), 1099 (All), F/B 2000NF	80, 90	3796
<b>Plastics (Polyolefins)</b>	–	–	–	–	4693	72, 76, 90	3764, 3748, 3792LM
<b>Plastics (ABS, PVC, Acrylic, etc.)</b>	Flexible 2-Part Epoxies, 2-Part Urethanes	–	TS115, TS230, TE040, EZ250150	17010, 17060	4475	72, 77, 80, 90	3764, 3747, 3792, 3792LM
<b>Plastics (High Performance-Nylon)</b>	DP190 DP460	–	–	–	1099 (All), 4693	72, 77, 80, 90	3796

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Glass and Ceramics to: (cont.)	Structurals				Non-Structurals		
	3M™ Scotch-Weld™ Epoxy, Acrylic, Urethane Adhesives	3M™ Scotch-Weld™ Instant Adhesives	3M™ Scotch-Weld™ Polyurethane Reactive (PUR) Adhesives	3M™ Scotch-Weld™ Polyurethane Reactive (PUR) Easy Adhesives	3M™ Scotch-Weld™ and Fastbond™ Adhesives	3M™ Aerosol Adhesives	3M™ Scotch-Weld™ Hot Melt Adhesives
<b>Plastics (Flexible Vinyl)</b>	Flexible 2-Part Epoxies	–	TS115, TS230, TE040, EZ250150	17010, 17060	2262, 4475	80	3796
<b>Paper and Cardboard</b>	Flexible 2-Part Epoxies, 2-Part Urethanes	–	TS115, TS230, TE040, EZ250150	17010, 17060	4550, F/B 2000NF, F/B 49	75*, 77	3764, 3796, 3792LM, 3747
<b>Fabric, Felt, Cork &amp; Fibrous Glass</b>	Flexible 2-Part Epoxies	–	TS115, TS230, TE040, EZ250150	17010, 17060	4550, F/B 49, F/B 2000NF 90	72, 74, 76 75*, 77,	3764, 3796, 3747, 3792LM
<b>Flexible Foam (Latex, Urethane)</b>	2-Part Urethanes	–	TS115, TS230, TE040, EZ250150	17010, 17060	F/B 2000NF	74, 76, 90	3764, 3796, 3747, 3792LM
<b>Rigid Foam (Beadboard, Styrene)</b>	Flexible 2-Part Epoxies, 2-Part Urethanes	–	TS115, TS230, TE040, EZ250150	17010, 17060	F/B 30NF,	77, 78	3792LM
<b>Rigid Foam (Urethane)</b>	2-Part Urethanes	–	TS115, TS230, TE040, EZ250150	17010, 17060	1357 (All), 10, F/B 30NF	74, 80	3764, 3796, 6111
<b>Leather to:</b>							
<b>Leather</b>	Flexible 2-Part Epoxies, 2-Part Urethanes	CA50	All Products	All Products	847, F/B 30NF, F/B 2000NF	80, 90	3789, 3796, 3779
<b>Plastic (Polyolefins)</b>	–	–	–	–	F/B 2000NF	76, 90	3796
<b>Plastics (ABS, PVC, Acrylic, etc.)</b>	Flexible 2-Part Epoxies, 2-Part Urethanes	CA100	TE031, TS230, TE040, EZ250030, EZ250150	17010, 17030	847 (All), 1099 (All), F/B 2000NF	80, 90	3789, 3796, 3779
<b>Plastics (Flexible Vinyl)</b>	Flexible 2-Part Epoxies	CA50, CA100	All Products	All Products	4475, 1099 (All), F/B 2000NF	80	3789, 3796, 3779
<b>Paper and Cardboard</b>	Flexible 2-Part Epoxies, 2-Part Urethanes	–	All Products	All Products	F/B30NF, F/B 2000NF, F/B 100	75*, 77	3789, 3796, 3779
<b>Fabric, Felt, Cork and Fibrous Glass</b>	Flexible 2-Part Epoxies, 2-Part Urethanes	–	All Products	All Products	F/B 30NF, F/B 100, F/B 2000NF, F/B 49	76, 80	3789, 3796, 3779
<b>Flexible Foam (Latex, Urethane)</b>	2-Part Urethanes	–	All Products	All Products	F/B 2000NF, F/B 100	80	3789, 3796, 3779
<b>Rigid Foam (Beadboard, Styrene)</b>	Flexible 2-Part Epoxies, 2-Part Urethanes	–	All Products	All Products	F/B 30NF, F/B 2000NF	–	–
<b>Rigid Foam (Urethane)</b>	2-Part Urethanes	–	All Products	All Products	F/B 30NF, F/B 2000NF	80	3789, 3796, 3779
<b>Plastics (Polyolefins) to:</b>							
<b>Plastics (Polyolefins)</b>	DP8005, DP8010	–	–	–	4693, F/B 2000NF <sup>(1)</sup>	72, 76, 90	3731, 3748, 3764, 3792LM, 6111 <sup>2</sup>
<b>Plastics (ABS, PVC, Acrylic, etc.)</b>	DP8005, DP8010	–	–	–	4693, F/B 2000NF <sup>(1)</sup>	76, 90	3731, 3748, 3764, 6111 <sup>2</sup> , 3792LM
<b>Plastics (High Performance Nylon)</b>	DP8005, DP8010	–	–	–	4693	76, 90	3796
<b>Plastics (Flexible Vinyl)</b>	DP8005, DP8010	–	–	–	–	–	3796
<b>Paper and Cardboard</b>	–	–	–	–	4693, F/B 100, F/B 2000NF	75*, 77	3748, 3764, 3731, 6111 <sup>2</sup> , 3792LM
<b>Fabric, Felt, Cork, &amp; Fibrous Glass</b>	–	–	–	–	4693, F/B 49, F/B 2000NF	72, 74, 76, 90	3748, 3764, 6111 <sup>2</sup> , 3792LM, 3731

(1) Adhesive *must* be force dried and bonded while warm.  
\* Produces a temporary bond on these materials. <sup>2</sup> 6111 is a family of products that includes 6111, 6111HT, and 6111.

Note: The technical information and data on these pages should be considered representative or typical only and should not be used for specification purposes. Final product selection should be made only after consideration of a variety of factors and evaluation of sample bonds.

Plastics (Polyolefins) to: (cont.)	Structurals				Non-Structurals		
	3M™ Scotch-Weld™ Epoxy, Acrylic, Urethane Adhesives	3M™ Scotch-Weld™ Instant Adhesives	3M™ Scotch-Weld™ Polyurethane Reactive (PUR) Adhesives	3M™ Scotch-Weld™ Polyurethane Reactive (PUR) Easy Adhesives	3M™ Scotch-Weld™ and Fastbond™ Adhesives	3M™ Aerosol Adhesives	3M™ Scotch-Weld™ Hot Melt Adhesives
<b>Flexible Foam (Latex, Urethane)</b>	–	–	–	–	F/B 2000-NF, F/B 100	72, 74, 76, 90	3748, 3764, 3731, 3792LM, 3796, 6111 <sup>1</sup>
<b>Rigid Foam (Beadboard, Styrene)</b>	DP8005, DP8010	–	–	–	F/B 2000NF <sup>(1)</sup>	–	3792LM, 6111
<b>Rigid Foam (Urethane)</b>	DP8005, DP8010	–	–	–	4693, F/B 2000NF <sup>(1)</sup>	74, 76, 90	3748, 3764, 6111, 3792LM, 3794
<b>Plastics (ABS, PVC, Acrylic) to:</b>							
<b>Plastics (ABS, PVC, Acrylic, etc.)</b>	Flexible 2-Part Epoxies, 2-Part Urethanes, Acrylics	CA's All Products TE040	TE031, TS115, TS230, EZ250030, EZ250150	17010, 17060	1099 (All), 4475, F/B 2000NF <sup>(1)</sup>	76, 77, 90	3731, 3747, 3764, 3748, 3776LM, 3792LM
<b>Plastics (High Performance-Nylon)</b>	Flexible 2-Part Epoxies, 2-Part Urethanes, Acrylics	CA's (All)	–	–	1099, 4693	72, 77, 90	3796
<b>Plastics (Flexible Vinyl)</b>	Flexible 2-Part Epoxies	CA40, CA50, CA100	TE031, TS115, TS230, TE040, EZ250030, EZ250150	17010, 17060	1099 (All), 2262, 4475	80*	3789, 3796, 3779
<b>Paper and Cardboard</b>	Flexible 2-Part Epoxies, 2-Part Urethanes	CA40H	TE031, TS115, TS230, TE040, EZ250030, EZ250150	17010, 17060	4550, F/B 100, F/B 49, F/B 2000NF,	75*, 77	3764, 3792, 6111 <sup>1</sup> , 3792LM, 3747, 3748, 3776LM
<b>Fabric, Felt, Cork &amp; Fibrous Glass</b>	Flexible 2-Part Epoxies, 2-Part Urethanes	–	TE031, TS115, EZ250030, EZ250150 TS230, TE040, EZ250030, EZ250150	17010, 17060	4550, F/B 100, F/B 49, F/B 2000NF,	76, 77, 90	3747, 3764 3792, 3792LM, 3776LM
<b>Flexible Foam (Latex, Urethane)</b>	2-Part Urethanes	–	TE031, TS115, TS230, TE040, EZ250030, EZ250150	17010, 17060	F/B 2000NF, F/B 100	–	3747, 3764, 3748, 3792LM, 3776LM
<b>Rigid Foam (Beadboard, Styrene)</b>	Flexible 2-Part Epoxies, 2-Part Urethanes	–	TE031, TS115, TS230, TE040, EZ250030, EZ250150	17010, 17060	F/B 2000NF <sup>(1)</sup> , F/B 100, F/B 49	77, 78,	3792LM, 3776LM, 6111 <sup>1</sup>
<b>Rigid Foam (Urethane)</b>	Flexible 2-Part Epoxies, 2-Part Urethanes	–	TE031, TS115, TS230, TE040, EZ250030, EZ250150	17010, 17060	1099, 4693, 4475, F/B 2000NF <sup>(1)</sup>	80	3747, 3764, 3792, 3792LM, 3776LM
<b>Plastics (High Performance) Nylon to:</b>							
<b>Plastics (High Performance-Nylon)</b>	DP190, DP460	CA's All Products	–	–	1099 All Products, 4693	76, 77, 90	3764, 3796
<b>Plastics (Flexible Vinyl)</b>	Flexible 2-Part Epoxies	CA40, CA50, CA100	–	–	1099 All Products	80	3789, 3796
<b>Paper and Cardboard</b>	Flexible, 2-Part Epoxies, 2-Part Urethanes	–	–	–	4550, F/B 100	75*, 77, 90	3747, 3764,
<b>Fabric, Felt, Cork &amp; Fibrous Glass</b>	Flexible, 2-Part Epoxies, 2-Part Urethanes	–	–	–	4550, 4693, F/B 49	76, 77, 90	3747, 3764, 3796
<b>Flexible Foam (Latex, Urethane)</b>	2-Part Urethanes	–	–	–	F/B 2000NF, F/B 100	74, 76, 90	3747, 3764, 3796
<b>Rigid Foam (Beadboard, Styrene)</b>	Flexible 2-Part Epoxies, 2-Part Urethanes	–	–	–	F/B 2000NF	78	–
<b>Rigid Foam (Urethane)</b>	2-Part Urethanes	–	–	–	1099 All Products, 4693	80	3747, 3764, 3796

<sup>1</sup> 6111 is a family of products that includes 6111, 6111HT, and 6111. Note: The technical information and data on these pages should be considered representative or typical only and should not be used for specification purposes. Final product selection should be made only after consideration of a variety of factors and evaluation of sample bonds.

Plastic (Flexible Vinyl) to:	Structurals				Non-Structurals		
	3M™ Scotch-Weld™ Epoxy, Acrylic, Urethane Adhesives	3M™ Scotch-Weld™ Instant Adhesives	3M™ Scotch-Weld™ Polyurethane Reactive (PUR) Adhesives	3M™ Scotch-Weld™ Polyurethane (PUR) Easy Adhesives	3M™ Scotch-Weld™ and Fastbond™ Adhesives	3M™ Aerosol Adhesives	3M™ Scotch-Weld™ Hot Melt Adhesives
<b>Plastics (Flexible Vinyl)</b>	Flexible 2-Part Epoxies	CA40, CA50, CA100	All Products	All Products	1099 All Products, 2262, 4475	80	3789, 3796, 3779
<b>Paper and Cardboard</b>	Flexible 2-Part Epoxies	–	All Products	All Products	1099 (All), 2262, 4475, F/B 2000NF	80	3789, 3796, 3779
<b>Fabric, Felt, Cork and Fibrous Glass</b>	Flexible 2-Part Epoxies, 2-Part Urethanes	–	All Products	All Products	1099 (All), 2262, 4475, F/B 2000NF	80	3789, 3796, 3779
<b>Rigid Foam (Beadboard, Styrene)</b>	Flexible, 2-Part Epoxies, 2-Part Urethanes	–	All Products	All Products	–	–	–
<b>Rigid Foam (Urethane)</b>	2-Part Urethanes	–	All Products	All Products	1099 (All), 2262, 4475	80	3789, 3796
<b>Paper and Cardboard to:</b>							
<b>Paper and Cardboard</b>	2-Part Epoxies, 2-Part Urethanes	–	All Products	All Products	4550, F/B 100, F/B 30NF, F/B 49, F/B 2000NF	75*, 77	3762, 3762LM, 3792LM, 3798LM, 6111 <sup>1</sup> , 3755LM, 3750LM, 3793
<b>Fabric, Felt, Cork &amp; Fibrous Glass</b>	Flexible 2-Part Epoxies, 2-Part Urethanes	–	All Products	All Products	4550, F/B 100, F/B 4213NF, F/B 49, F/B 2000NF	75*, 76, 77	3738, 3762LM, 3792LM, 3750LM, 3755LM, 3792, 3764
<b>Flexible Foam (Latex, Urethane)</b>	2-Part Urethanes	–	All Products	All Products	F/B 2000NF, F/B 100	77	3762, 3762LM, 3792, 3792LM, 3750LM, 3755LM, 6111 <sup>1</sup>
<b>Rigid Foam (Beadboard, Styrene)</b>	2-Part Epoxies, 2-Part Urethanes	–	All Products	All Products	F/B 30NF, F/B 2000NF	78	3755LM, 3762LM, 3792LM, 3750LM, 6111 <sup>1</sup> , 3794
<b>Rigid Foam (Urethane)</b>	2-Part Urethanes	–	All Products	All Products	4550, F/B 2000NF	77, 80	3762, 3762LM, 3792LM, 3776LM, 6111 <sup>1</sup>
<b>Fabric, Felt, Cork and Fibrous Glass to:</b>							
<b>Fabric, Felt, Cork &amp; Fibrous Glass</b>	Flexible 2-Part Epoxies, 2-Part Urethanes	–	All Products	All Products	4550, F/B 100, F/B 49, F/B 2000NF	72, 74, 75*, 76, 77, 90	3738, 3747, 3792LM, 3776LM, 6111 <sup>1</sup> , 3794
<b>Flexible Foam (Latex, Urethane)</b>	2-Part Urethanes	–	All Products	All Products	F/B 2000NF, F/B 100	74, 76, 77, 90	3738, 3747, 3792LM, 3776LM, 6111 <sup>1</sup>
<b>Rigid Foam (Beadboard, Styrene)</b>	Flexible 2-Part Epoxies, 2-Part Urethanes	–	All Products	All Products	F/B 30NF, F/B 2000NF	77, 78	3755LM, 3762LM, 3792LM, 3750LM, 6111 <sup>1</sup> , 3794
<b>Rigid Foam (Urethane)</b>	2-Part Urethanes	–	All Products	All Products	F/B 30NF, F/B 2000NF	77, 80	3755LM, 3762LM, 3792LM, 6111, 3776LM, 3778LM, 3794

Note: This chart is intended only to indicate possible product candidates for your particular application requirements. Final product selection should be made only after consideration of a variety of factors and evaluation of sample bonds.

<sup>1</sup> 6111 is a family of products that includes 6111, 6111HT, and 6111.

\* Produces a temporary bond on these materials.

Flexible Foam (Latex Urethane) to:	Structurals				Non-Structurals		
	3M™ Scotch-Weld™ Epoxy, Acrylic, Urethane Adhesives	3M™ Scotch-Weld™ Instant Adhesives	3M™ Scotch-Weld™ Polyurethane Reactive (PUR) Adhesives	3M™ Scotch-Weld™ Polyurethane Reactive (PUR) Easy Adhesives	3M™ Scotch-Weld™ and Fastbond™ Adhesives	3M™ Aerosol Adhesives	3M™ Scotch-Weld™ Hot Melt Adhesives
<b>Flexible Foam (Latex, Urethane)</b>	2-Part Urethanes	–	All Products	All Products	F/B 2000NF, F/B 100	74, 76, 80, 90	3738, 3764, 3792LM, 6111 <sup>1</sup> , 3747
<b>Rigid Foam (Beadboard, Styrene)</b>	2-Part Urethanes	–	All Products	All Products	F/B 2000NF, F/B 100	78	3762LM, 6111 <sup>1</sup> , 3792LM, 3778LM
<b>Rigid Foam (Urethane)</b>	2-Part Urethanes	–	All Products	All Products	F/B 2000NF, F/B 100	74, 80	3792, 3792LM, 3776LM, 6111, 6114
<b>Rigid Foam (Beadboard, Styrene) to:</b>							
<b>Rigid Foam (Beadboard, Styrene)</b>	2-Part Epoxies, 2-Part Urethanes	–	All Products	All Products	F/B 49, F/B 2000NF	78	3762LM, 6111 <sup>1</sup> , 3792LM, 3794, 3795, 6114
<b>Rigid Foam (Urethane)</b>	2-Part Urethanes	–	All Products	All Products	F/B 30NF, F/B 2000NF	–	3762LM, 3792LM, 3776LM, 6111, 3778LM, 3794
<b>Rigid Foam (Urethane) to:</b>							
<b>Rigid Foam (Urethane)</b>	2-Part Urethanes	–	All Products	All Products	1357 (All), F/B 30NF, F/B 2000NF <sup>(1)</sup>	80	3747, 3792, 6111 <sup>1</sup> , 3792LM, 3794

<sup>1</sup> 6111 is a family of products that includes 6111, 6111HT, and 6111.

Note: This chart is intended only to indicate possible product candidates for your particular application requirements. Final product selection should be made only after consideration of a variety of factors and evaluation of sample bonds.