

3M Scotch-Weld™

Structural Adhesives

The image shows the iconic 3M logo in a bold, red, sans-serif font. The '3' is a single digit, and the 'M' is a double-digit 'M'. The logo is centered horizontally and vertically within its white rectangular background.

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*SERVING INDUSTRY
FOR OVER 73 YEARS*

3M™ Structural Adhesives

The brand name “Scotch-Weld” is based on aircraft company conclusions made in the early 1950’s that this class of 3M load-bearing adhesive exhibited assembly strength comparable to welding.

Today, industries worldwide take advantage of the wide selection of 3M™ Scotch-Weld™ Adhesives and innovative dispensing for many applications. Examples include: bushing assembly in appliances, headlight assembly in cars, fiberglass decks in boats, relays and controls in electronic equipment, lawn sprinklers, POP displays, office partitions, pump casting components, golf clubs, and home furniture.

Each adhesive has high cohesive strength to bond high strength materials and potentially replace mechanical fasteners. Depending on the adhesive, you can bond metals, wood, rubber, ceramic, composites, engineering grade plastics, glass, and more.

Products include the following:

- 3M™ Scotch-Weld™ Epoxy, Acrylic, and Urethane Adhesives
- 3M™ Scotch-Weld™ Instant Adhesives
- 3M™ Scotch-Weld™ Anaerobic Adhesives
- 3M™ Scotch-Weld™ Polyurethane Reactive (PUR) Adhesives and Applicator





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.



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With handling strength in 2 hours and full cure in 24 hours, 3M™ Scotch-Weld™ Epoxy Adhesive DP420 bonds the shaft into the head 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™ Two-Part Epoxy Adhesive 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.



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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.



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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.



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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.



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

Product Information: 3M™ Scotch-Weld™ Adhesives in Duo-Pak Cartridges

Product (Color) ⁽¹⁾	Description	Mix Ratio (Volume) B:A	Approximate Viscosity 75°F (24°C) (CPS)	Approximate ⁽³⁾ Worklife At 75°F (24°C)	Average T-Peel ⁽⁴⁾ At 75°F (24°C) (PIW)	Overlap Shear Strength ⁽⁵⁾ (PSI)			
						-67°F (-55°C)	75°F (24°C)	180°F (82°C)	
Epoxy	DP100 Clear	• Fast cure rigid epoxy • 15-20 min. handling strength	1:1	13,000	4 Min.	2	900	1500	300
	DP100Plus Clear	• Higher peel and shear strength version of 178-100	1:1	8,500	4 Min.	10	3000	3500	200
	DP100NS Translucent	• 25-30 min. handling strength • Low flow version of DP100	1:1	95,000	6 Min.	2	900	1500	300
	DP100FR White	• 25-30 min. handling strength • Meets UL94V-0 rating • Self-extinguishing version of DP100	1:1	80,000	6 Min.	2	800	1400	400
	DP105 Clear	• Fast cure epoxy • Very flexible • Excellent peel strength	1:1	6,500	5 Min.	35	3500	2000	150
	DP110 Gray	• Fast cure flexible epoxy • 30 min. handling strength	1:1	55,000	9 Min.	15	2000	2500	200
	DP110 Translucent	• 30 min. handling strength • Translucent version of DP110, gray	1:1	50,000	9 Min.	15	2000	2500	200
	DP125 Gray	• Good peel strength epoxy • Medium worklife	1:1	52,500	25 Min.	35	3400	3400	400
	DP125 Translucent	• Good peel strength epoxy • Medium worklife	1:1	15,000	25 Min.	35	4000	2500	150
	DP190 Gray	• Long worklife flexible epoxy • 8-12 hrs. handling strength • Bonds many dissimilar materials	1:1	80,000	90 Min.	20	1500	2500	400
	DP190 Translucent	• Long worklife epoxy • Good peel strength	1:1	10,000	90 Min.	30	3500	1700	150
	DP270 Black	• Long worklife potting compound • 8-12 hrs. handling strength • Rigid epoxy	1:1	12,000	70 Min.	2	1200	2500	300
	DP270 Clear	• Clear version of DP270 Black • Many electronic applications	1:1	12,000	70 Min.	2	1200	2500	300
	DP420 Off-White	• Medium worklife toughened epoxy • 1-2 hrs. handling strength	2:1	30,000	20 Min.	50	4500	4500	450
	DP420 Black	• Black version of DP420 Off-White • Tough, durable structural bonds	2:1	30,000	15 Min.	50	4500	4500	1260
	DP460 Off-White	• Long worklife toughened epoxy • 2-4 hrs. handling strength	2:1	30,000	60 Min.	60	4500	4500	700
DP460NS Off-White	• Non-sag version of DP460 • Heat curable • High performance	2:1	125,000	60 Min.	60	4500	4500	1360	
Urethane	DP601 Gray	• Self-leveling urethane • Fast cure	1:1	6,000	70 Sec.	-	-	2300	-
	DP601NS Gray	• Non-sag urethane • Fast cure	1:1	>250,000	50 Sec.	-	-	2300	-
	DP604NS Black	• Non-sag urethane • Flexible	1:1	>250,000	4 Min.	-	-	900	-
	DP605NS Off-White	• Fast cure semi-rigid urethane • Non-sag • Gap filler • 15-20 min. handling strength	1:1	150,000	4 Min.	15	1000	1250	150
	DP608 Gray	• Non-sag urethane	1:1	>250,000	8 Min.	-	-	2000	-
	DP620NS Black	• Non-sag urethane	1:1	>250,000	20 Min.	-	-	2500	-
	DP640 Brown	• Long worklife urethane • Non-sag • Tough, flexible bonds	1:1	25,000	40 Min.	25	2500	2000	300
Acrylic	DP805 Lt. Yellow	• High peel and shear strength acrylic • Bonds slightly oily material • High temp performance • Excellent plastic adhesion	1:1	110,000	4 Min.	25	2500	3500	2200
	DP810 Tan, Black	• Acrylic bonds many metals and plastics without surface prep • Fast strength buildup • Fully cured in 8 hours • Low odor	1:1	18,000 - 20,000	8-10 Min.	30	1200	3600	500
	DP810NS	• Non-sag version of DP810 • 10-15 min. handling strength	1:1	90,000 - 95,000	8-10 Min.	20	1200	4000	500
	DP820 Yellow	• Medium worklife acrylic • High shear strength • Bonds slightly oily metals • Tough, flexible bonds	1:1	55,000	15-20 Min.	15	2500	3100	900

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) Color is mixed if two-part product.

(2) Brookfield viscometer viscosity values are typical values for the mixed product.

(3) The time during which an adhesive will adequately wet-out on a substrate.

(4) 180° peel tested on .030" aluminum per ASTM D 1876-61T.

(5) Tested per ASTM D 1002-64.

Product Information: 3M™ Scotch-Weld™ Adhesives in Duo-Pak Cartridges (continued)

Product (Color) ⁽¹⁾	Description	Mix Ratio (Volume) B:A	Approximate ⁽²⁾ Viscosity 75°F (24°C) (CPS)	Approximate ⁽³⁾ Worklife At 75°F (24°C)	Average T-Peel ⁽⁴⁾ At 75°F (24°C) (PIW)	Overlap Shear Strength ⁽⁵⁾ (PSI)		
						-67°F (-55°C)	75°F (24°C)	180°F (82°C)
Acrylic	DP8005 Off-White	10:1	27,500	2.5-3 Min.	16	–	2000	300
	DP8010	10:1	17,000 - 22,000	10 Min.	30	-	1800	400
	DP8010NS	10:1	27,000 - 45,000	10 Min.	30	–	2400	400

Product Information: 3M™ Scotch-Weld™ Two-Part Structural Adhesives

Product (Color) ⁽¹⁾	Description	Mix Ratio (Volume) B:A	Approximate ⁽²⁾ Viscosity 75°F (24°C) (CPS)	Approximate ⁽³⁾ Worklife At 75°F (24°C)	Average T-Peel ⁽⁴⁾ At 75°F (24°C) (PIW)	Overlap Shear Strength ⁽⁵⁾ (PSI)		
						-67°F (-55°C)	75°F (24°C)	180°F (82°C)
Two-Part Epoxy	1751 B/A Gray	3:2	700,000	45 Min.	4	1400	2000	500
	1838 B/A Green	4:5	400,000	60 Min.	4	1500	3000	500
	1838 B/A Tan	6:5	250,000	60 Min.	5	1500	3000	500
	1838L B/A Translucent	1:1	10,000	60 Min.	5	2000	3000	300
	2158 B/A Gray	1:1	375,000	120 Min.	4	1700	2000	400
	2216 B/A Gray	2:3	80,000	90 Min.	25	2000	2500	400
	2216 B/A Tan Non-sag	2:3	350,000	90 Min.	25	2000	2500	400
	2216 B/A Translucent	1:1	10,000	120 Min.	25	3000	2000	150
	3501 B/A Gray	1:1	500,000	7 Min.	5	1500	2400	300
Two-Part Urethane	3532 B/A Brown	1:1	30,000	7 Min.	25	2500	2000	300
	3535 B/A Off-White	1:1	30,000	3 Min.	25	2500	2000	300
	3549 B/A Brown	1:1	30,000	60 Min.	25	2500	2000	300

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(1) Color is mixed if two-part product.

(2) Brookfield viscometer viscosity values are typical values for the mixed product.

(3) The time during which an adhesive will adequately wet-out on a substrate.

(4) 180° peel tested on .030" aluminum per ASTM D 1876-61T.

(5) Tested per ASTM D 1002-64.

Product Information: 3M™ Scotch-Weld™ One-Part Epoxy Adhesives; Metal Primers

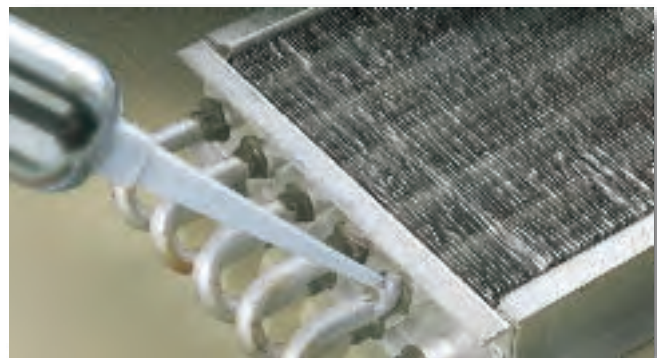
Product (Color)	Description	Viscosity	Optimum Cure			Overlap Average T-Peel At 75°F (24°C)	Shear Strength ⁽²⁾ PSI					
			Time (Min.)	Temp (°F/°C)	Pressure (PSI)		-67°F (-55°C)	75°F (24°C)	180°F (82°C)	250°F (121°C)	350°F (177°C)	
One-Part Epoxy	1386 Cream	• 350°F (177°C) curing for metal to metal • High strength, impact resistant bonds • Meets MMM-A-134 Type III	150,000 CPS	60	350/177	10	10 (Alum.)	3000	5500	4500	2500	400
	1469 Cream	• 350°F (177°C) curing for elevated temperatures • Meets MMM-A-132 Type II, Class 3, Group 4	60,000 CPS	120	350/177	10	2 (Alum.)	3150	3700	3700	3600	–
	2086 Gray	• 350°F (177°C) curing similar to 1386 but filled flow control	Paste	60	350/177	10	5 (Alum.)	3000	5000	5000	2200	500
	2214 Regular Gray	• Aluminum filled heat curing (250°F, 121°C) • Paste for metals and many plastics	Paste	60	250/121	10	5 (Alum.) 50 (Steel)	3000	4500	4500	1500	400
	2214 Hi-Density Gray	• Similar to 2214 • Deaerated • Dense, void-free bonds	Paste	60	250/121	10	5 (Alum.) 50 (Steel)	3000	4500	4500	1700	400
	2214 Hi-Temp Original Gray	• Outstanding performance at elevated temperatures • Excellent sag control	Paste	60	250/121	10	2 (Alum.) 5 (Steel)	2000	2000	3000	2500	900
	2214 Hi-Temp New Formula Gray	• Version of 2214 with excellent performance under high temperature and high humidity • Resists hot ethylene glycol	Paste	60	250/121	10	5 (Alum.) 5 (Steel)	2800	2800	2800	2500	1200
	2214 Non-Metallic Filled Cream	• Cream colored non-metallic version of 2214 • Electrical insulating	Paste	60	250/121	10	7 (Alum.) 12 (Steel)	3000	4000	4500	1500	400
	2290 Amber	• 21% solids liquid epoxy • B-stageable • Laminating steel cores for motor stators and rotors • Thin metal stack laminations	60 CPS	30	350/177	50	10 (Alum.)	5000	5000	3500	1200	–

Product Color	Description	Viscosity	Comments
Metal Primers	3901 Red	5 CPS	• Adhesion promoter • Organo-silane base • Brush or spray 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.
	1945 B/A Green	500 CPS	• 1:1 mix ratio 2-part primer • 8 hour potlife • Brush, spray or dip Chemically curing, corrosion resistant primer to improve adhesion of urethanes and epoxies to many metals. Increases corrosion protection. Cures at room temperature.

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) Tested per ASTM D 1876-61T.

(2) Tested per ASTM D 1002-64.



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

Product Information: 3M™ EPX™ Applicators and Nozzles

Cartridge Size	35ml (10:1)	37ml (2:1)	50ml (1:1)	200ml (1:1 and 2:1)	250ml (10:1)	400ml (1:1 and 2:1)
3M™ EPX™ Applicators <i>Manual</i>	EPX Plus II Applicator with 10:1 Plunger	EPX Metal Applicator with 2:1 Plunger	EPX Metal Applicator with 1:1 Plunger	EPX 200ml Manual Applicator with Plunger*	None	None
		EPX Plus II Applicator with 2:1 Plunger*	EPX Plus II Applicator with 1:1 Plunger*			
<i>Pneumatic</i>	None	EPX 50ml Pneumatic Applicator**	EPX 50ml Pneumatic Applicator	EPX 200ml Pneumatic Applicator	EPX 200ml Pneumatic Applicator	EPX 400ml Pneumatic Applicator
					10:1 Conversion Kit for EPX 200ml Pneumatic Applicator	
3M™ EPX™ Nozzles	10:1 Mixing Nozzle for the EPX Plus Applicator	EPX Mixing Nozzle for 50ml Applicator	EPX Mixing Nozzle for 50ml Applicator	EPX 6mm Nozzle for 200ml/400ml Applicators**	10:1 Mixing Nozzle for the EPX 250ml Applicator	EPX 6mm Nozzle for the 200ml/400ml Applicator**
		EPX Plus II Mixing Nozzle - Square Gold	EPX Plus II Mixing Nozzle - Square Gold	EPX 10mm Nozzle for 200ml/400ml Applicators		EPX 10mm Nozzle for 200ml/400ml Applicators

*Included with the applicator.

**Recommended for all low viscosity products.

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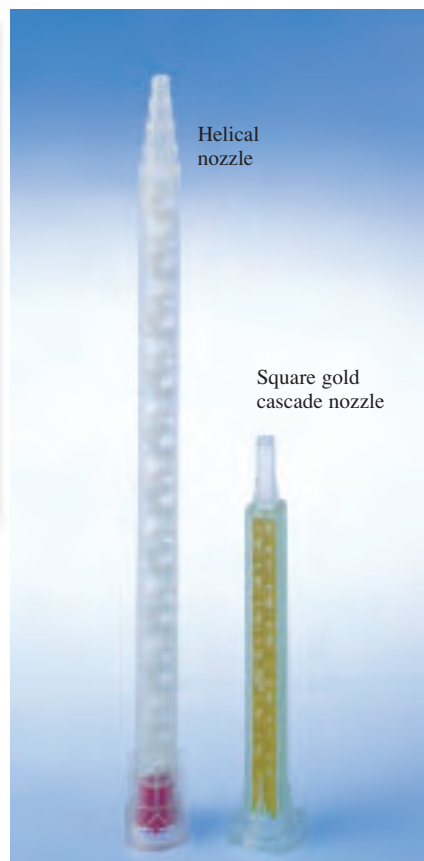


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To meet the performance requirements of your structural application, 3M doesn't just develop adhesives, but whole dispensing systems designed to facilitate production in low and high volume assembly operations.

For low volume applications and take-it-to-the-job convenience, the 3M™ EPX Plus II and EPX metal manual dispensers are engineered for comfortable grip and easy loading. With a choice of plungers, you can put any of the 3M™ Scotch-Weld™ Duo-Pak Structural Adhesives to work.

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



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Choice of helical or cascade nozzle

With the unique chambered design of the square gold nozzle, the two parts of the adhesive cascade through the nozzle with just low pressure. You mix and apply even higher viscosity adhesives with just an easy squeeze of the 3M™ EPX™ Applicator palm trigger.

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



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Both the helical and square gold 3M™ EPX™ Nozzles simultaneously mix, meter, and dispense 3M™ Scotch-Weld™ 2-Part Adhesives from Duo-Pak cartridges. Extended reach helical nozzle is used here in bonding ABS components of a pump housing.