

3M™ Scotch-Weld™ Structural Adhesives

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

As an alternative to mechanical or fusion fastening, the reasons for Scotch-Weld 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 you can select from one-part heat-curing epoxies, and two-part room-temperature curing epoxies, acrylics and urethanes. There are formulations for bonding steel, aluminum, copper, low surface energy plastics, rubber, glass, wood, masonry and more.

Whatever properties you need—durable adhesion, flexibility, creep resistance, heat and environmental resistance, void-filling—you'll likely find a Scotch-Weld product to meet your requirements and expectations.



3M has long been recognized as a pioneer in structural strength adhesives. But to meet end use performance requirements doesn't just mean providing the right chemical formula. Which is why 3M also develops dispensing systems to facilitate production in low and high volume assembly. Many two-part 3M formulations are available in Duo-Pak cartridges for dispensing with a manual or pneumatic 3M™ EPX™ Applicator.



Porch railing – 3M™ Scotch-Weld™ Structural Plastic Adhesive DP-8005 bonds unique thermo-plastic composite in assembly of hollow railings that are stiffer than wood.



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



Retail store display columns – To maintain the quality wood-like appearance, 3M™ Scotch-Weld™ Structural Plastic Adhesive DP-8005 eliminates screws, nails, and related surface finishing in assembly of plastic composite components.



Aircraft entry steps – Brush-applied 2-part 3M™ Scotch-Weld™ Adhesive 2216 B/A provides a tough, flexible bond between honeycomb and the framework in entry step panels of commuter aircraft.



Bicycle frame assembly – 3M™ Scotch-Weld™ Epoxy Adhesive DP-420 bonds steel couplings into aluminum tubing of the frame. Couplings are threaded for easy assembly and disassembly. The toughened epoxy bonds for the long run in high stress areas.



Bonding magnets to steel rotor – Bonds made with 2-part 3M™ Scotch-Weld™ Epoxy Adhesive DP-460 cure at room temperature and reach 4500 psi in overlap shear strength. Void-filling properties secure loose fitting surfaces.

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

Product (Color) ⁽¹⁾	Features	Mix Ratio (Volume) B:A	Approximate Viscosity 75°F (24°C) (CPS) ⁽²⁾	Approximate Worklife At 75°F (24°C) ⁽³⁾	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)	250°F (121°C)
DP-100 Clear	• Fast cure adhesive • Rigid epoxy • 15-20 min. handling strength • Machinable product	1:1	13,000	4 Min.	2	900	1500	300	200
DP-100Plus Clear	• Water clear • Fast cure rigid epoxy • Good peel and shear strength	1:1	8,500	4 Min.	13	3000	3500	200	150
DP-100NS Translucent	• 25-30 min. handling strength • Translucent low flow version of DP-100 Adhesive	1:1	95,000	6 Min.	2	900	1500	300	200
DP-100 FR White	• 25-30 min. handling strength • Meets UL94V-0 rating • Self-extinguishing version of DP-100 Adhesive	1:1	50,000	6 Min.	2	800	1400	400	200
DP-105 Clear	• Water clear • Fast cure • Very flexible • Excellent peel strength	1:1	6,500	5 Min.	35	3500	2000	150	100
DP-110 Gray	• Fast cure adhesive • Flexible epoxy • 30 min. handling strength	1:1	55,000	9 Min.	15	2000	2500	200	150
DP-110 Translucent	• 30 min. handling strength • Translucent version of DP-110 Gray Adhesive	1:1	50,000	9 Min.	10	2000	2500	200	150
DP-125 Gray	• Medium worklife • Good peel strength	1:1	52,500	25 Min.	35	3400	4300	400	200
DP-125 Translucent	• Medium worklife • Good peel strength	1:1	15,000	25 Min.	35	4000	2500	150	100
DP-190 Gray	• Long worklife adhesive • Flexible epoxy • 8-12 hrs. handling strength • Can bond metals, plastics and many other dissimilar materials	1:1	80,000	90 Min.	20	1500	2500	400	300
DP-190 Translucent	• Long worklife • Good peel strength	1:1	10,000	90 Min.	30	3500	1700	160	100
DP-270 Black	• Long worklife potting compound • 8-12 hrs. handling strength • Rigid epoxy	1:1	19,000	70 Min.	2	1200	2500	300	200
DP-270 Clear	• Clear version of DP-270 Black • Many electronic applications	1:1	19,000	70 Min.	2	1200	2500	300	200
DP-420 Off-White	• Medium worklife toughened epoxy • 1-2 hrs. handling strength • High performance	2:1	45,000	20 Min.	50	4500	4500	450	200
DP-420 Black	• Black version of DP-420 Off-White • Tough, durable structural bonds	2:1	22,500	15 Min.	50	4500	4500	2980	570
DP-460 Off-White	• Long worklife toughened epoxy • 2-4 hrs. handling strength • Meets MIL-A-23941A	2:1	45,000	60 Min.	60	4500	4500	700	200
DP-460NS Off-White	• Non-sag version of DP-460 • Heat curable • High-performance	2:1	125,000	60 Min.	60	4900	4650	2630	420
DP-4XL Off-White	• Extra long worklife toughened epoxy for large assemblies • Handling strength in 5 minutes at 250°F	2:1	22,500	5-6 Hours	60	2800	4880	1240	280
DP-605NS Off-White	• Fast cure semi-rigid urethane • 15-20 min. handling strength • Gap filler • Non sag for wood and plastic	1:1	150,000	4 Min.	15	1000	1250	325	100
DP-640 Brown	• Non-sag • Long worklife • Tough flexible bonds	1:1	25,000	40 Min.	25	2500	2000	300	150
DP-805 Lt. Yellow	• High peel and shear strength • Bonds slightly oily material • High temperature performance • Excellent plastic adhesion	1:1	110,000	4 Min.	35	2500	3500	2200	200 ⁽⁶⁾
DP-810 Tan	• Bonds many metals and plastics without surface preparation • Extremely fast strength build up • Fully cured in 6 hours	1:1	20,000	8-10 Min.	30	1200	4200	500	300 ⁽⁶⁾
DP-820 Yellow	• High shear and peel strengths • Bonds slightly oily metals • Medium worklife	1:1	60,000	15-20 Min.	22	3100	3150	1900	1450 ⁽⁶⁾

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.

(6) Tested at 200°F (93°C).

Adhesives in Duo-Pak Cartridges

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

Duo-Pak Cartridges	Product (Color) ⁽¹⁾	Features	Mix Ratio (Volume) B:A	Approximate Viscosity 75°F (24°C) (CPS)	Approximate 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)	250°F (121°C)
	DP-8005 Off-White, Black	<ul style="list-style-type: none"> Structurally bonds polyolefins without surface preparation Excellent environmental resistance 2-3 hour handling strength 	10:1	27,500	2.5-3 Min.	16	–	2000	340	–

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

	Product (Color) ⁽¹⁾	Features	Mix Ratio (Volume) B:A	Approximate Viscosity 75°F (24°C) (CPS)	Approximate 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)	250°F (121°C)
Two-Part Epoxy Adhesives	1751 B/A Gray	<ul style="list-style-type: none"> Long worklife adhesive Rigid epoxy 8-12 hrs. handling strength Excellent void filler and machinable for many "Body Solder" applications 	3:2	700,000	45 Min.	4	1400	2000	500	300
	1838 B/A Green	<ul style="list-style-type: none"> Long worklife adhesive Rigid epoxy 8-12 hrs. handling strength Meets MIL-A-23941A Excellent Environmental Resistance 	4:5	400,000	60 Min.	4	1500	3000	500	300
	1838 B/A Tan	<ul style="list-style-type: none"> Long worklife adhesive Rigid epoxy 8-12 hrs. handling strength Tan version of B/A 1838 Green Adhesive 	6:5	250,000	60 Min.	5	1500	3000	500	300
	1838-L B/A Translucent	<ul style="list-style-type: none"> Long worklife adhesive Rigid epoxy 8-12 hrs. handling strength Translucent, low viscosity version of 1838 B/A Green Adhesive 	1:1	10,000	60 Min.	5	2000	3000	400	200
	2158 B/A Gray	<ul style="list-style-type: none"> Long worklife adhesive Rigid epoxy 8-12 hrs. handling strength General purpose product 	1:1	375,000	120 Min.	4	1700	2000	400	300
	2216 B/A Gray	<ul style="list-style-type: none"> Long worklife adhesive Flexible epoxy 8-12 hrs. handling strength Can bond plastic, metal and other dissimilar materials 	2:3	80,000	90 Min.	25	2000	2500	400	200
	2216 B/A Tan Non sag	<ul style="list-style-type: none"> Long worklife adhesive Flexible epoxy 8-12 hrs. handling strength Tan version of 2216 B/A Gray Adhesive 	2:3	350,000	90 Min.	25	2000	2500	400	200
	2216 B/A Translucent	<ul style="list-style-type: none"> Long worklife adhesive Flexible epoxy 16-20 hrs. handling strength Translucent version of 2216 B/A Gray Adhesive 	1:1	10,000	120 Min.	25	3000	2000	200	100
	3501 B/A Gray	<ul style="list-style-type: none"> Fast cure adhesive Rigid epoxy 20-30 minutes handling strength Rapid room temperature curing material that can bond metal, wood, most plastics and masonry products 	1:1	500,000	7 Min.	5	1500	2400	300	200
Two-Part Urethane Adhesives	3532 B/A Brown	<ul style="list-style-type: none"> Fast cure adhesive 20-30 min. handling strength Semi-rigid urethane Rapid cure for flexible bonds of many plastics, wood, and rubber 	1:1	30,000	7 Min.	25	2500	2000	300	150
	3535 B/A Off-White	<ul style="list-style-type: none"> Very fast cure adhesive 15-20 min. handling strength Semi-rigid urethane Faster setting version of 3532 B/A Adhesive 	1:1	30,000	3 Min.	25	2500	2000	300	150
	3549 B/A Brown	<ul style="list-style-type: none"> Long worklife adhesive 2-4 hrs. handling strength Semi-rigid urethane Longer worklife version of 3532 B/A Adhesive 	1:1	30,000	60 Min.	25	2500	2000	300	150

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(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)	Features	Viscosity	Optimum Cure			Average T-Peel At 75°F (24°C)	Overlap 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)
1386 Cream	A 350°F (177°C) curing epoxy for metal to metal bonding provides exceptionally high strength, impact resistant bonds. Meets requirements of MMM-A-134 Type III.	150,000 cps	60	350/177	10	10 (Alum.)	3000	5500	4500	2500	400
1469 Cream	A 350°F (177°C) curing epoxy with excellent performance at elevated temperatures. Meets requirements of MMM-A-132 Type II, Class 3, Group 4.	60,000 cps	120	350/177	10	2 (Alum.)	3150	3700	3700	3600	1000
2086 Gray	A 350°F (177°C) curing epoxy similar to 1386 Adhesive but filled to provide excellent 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) structural adhesive of paste consistency. Can bond metals, glass and many plastics.	Paste	60	250/121	10	5 (Alum.) 50 (Steel)	3000	4500	4500	1500	400
2214 Hi-Density Gray	Similar to 2214 regular adhesive but deaerated and formulated to provide dense, void-free bond lines.	Paste	60	250/121	10	5 (Alum.) 50 (Steel)	3000	4500	4500	1700	400
2214 Hi-Temp Original Gray	Formulated to provide outstanding performance at elevated temperatures and excellent sag control.	Paste	60	250/121	10	2 (Alum.) 5 (Steel)	2000	2000	3000	2500	900
2214 Hi-Temp New Formula Gray	A version of 2214 Hi-Temp Adhesive with exceptional performance at elevated temperatures and excellent performance under high temperature and high humidity conditions. Resists attack by hot ethylene glycol.	Paste	60	250/121	10	5 (Alum.) 5 (Steel)	2800	2800	2500	2000	1200
2214 Hi-Flex Gray	Similar to 2214 Regular Adhesive but deaerated and formulated to provide bonds featuring outstanding shock resistance.	Paste	60	250/121	10	10 (Alum.) 65 (Steel)	2500	4000	2000	450	250
2214 Non-Metallic Filled Cream	A cream colored non-metallic version of 2214 Regular Adhesive suggested for electrical applications where insulating qualities are desired.	Paste	60	250/121	10	7 (Alum.) 12 (Steel)	3000	4000	4500	1500	400
2290 Amber	A 21% solids liquid epoxy. B-stageable. Can be used in laminating steel cores for motor stators and rotors. Excellent for many thin metal stack laminations such as those used in magnetic tape heads.	60 cps	30	350/177	50	10 (Alum.)	5000	5000	3500	1200	200

Product Color	Features	Viscosity	Comments
3901 Red	<ul style="list-style-type: none"> Adhesion promoter Organo-silane base Brush or spray application 	5 CPS	A primer for film and liquid adhesives in those applications where it is desired to obtain improved metal and glass adhesion or improved resistance to environmental exposure with epoxy and urethane adhesives. It can help simplify production scheduling by protecting the cleaned surfaces until the bonding operations can be completed and imparts improved corrosion protection to metal.
1945 B/A Green	<ul style="list-style-type: none"> 1:1 mix ratio 2-part epoxy primer 8 hour potlife Brush, spray or dip application 	500 CPS	It is a two-part chemically curing, corrosion resistant primer to improve adhesion of urethanes and epoxies to many metals as well as offering increased corrosion protection. It cures at room temperature and has excellent adhesion to many metals.

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

(2) Tested per ASTM D 1002-64.