



# ADHESIVES & REPAIR MATERIALS

*This is Freeman's full line of adhesives supporting all of your tooling and prototyping needs, from the most advanced build-up materials to basic glue and dispensing equipment.*

**74-75**

**TUF<sup>®</sup> & Master<sup>®</sup> Repair Materials**

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**Epoxy Adhesives**

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**Methacrylates & Cyanoacrylates**

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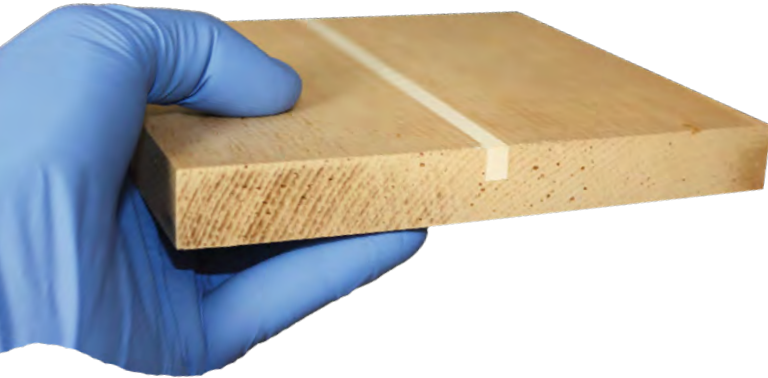
**Other Adhesives, Tools & Supplies**

# FREEMAN TUF® REPAIR & BUILD-UP MATERIALS

## Quick Facts

Formulated and manufactured by Freeman, TUF is a complete line of quality polyester repair & build-up materials which features:

- Fast setting – sandable in 15 minutes
- Low shrinkage
- Good wear resistance and bonds to most surfaces
- “No-sag” properties
- Good chemical resistance



## TUF-Fil®

Freeman TUF-Fil closely matches mahogany and other hardwoods in hardness. Suitable for high-wear applications, it may be scraped, filed, tapped and sanded when fully cured. While it is still rubbery, it is carvable using woodworking tools. TUF-Fil Gray (Aluminum) makes a great repair material for gray fixture boards. Hardener included.

SKU	Size	Color	Net weight (lb.)
053405	Quart	Mahogany	2.8
053410	Quart	Pine	2.8
053415	Quart	Gray (Aluminum)	2.8
053425	Gallon	Mahogany	11.5
053430	Gallon	Pine	11.5
053435	Gallon	Gray (Aluminum)	11.5
053428	3 Gallon Cartridge	Mahogany	31.5
053433	3 Gallon Cartridge	Pine	31.5
053437	3 Gallon Cartridge	Gray (Aluminum)	31.5

## TUF-Fil® White

TUF-Fil White is the hardest, strongest and most dense of the TUF line of products. Excellent for repairing composite laminate tooling. Hardener included.

SKU	Size	Color	Net weight (lb.)
053420	Quart	White	3.8
053440	Gallon	White	12.5
053438	3 Gallon Cartridge	White	31.5

## Specifications

	Mix Ratio (by wt.) Resin: Hardener	Gel Time (Min)	Hardness (Shore D) @ 24 hr.	Viscosity (cps)	Density (g/cc)	Colors Available
TUF-Fil	100:1.5	11	81	912,000	1.74	Mahogany, Pine, Gray
TUF-Fil White	100:1.5	9	95	400,000	2.50	White
Hi-Temp TUF-Fil	100:1.5	9	82	830,000	1.68	Dark Gray
TUF-Carv	100:1.5	10	71	581,000	1.14	Mahogany and Pine
ASTM	–	D-2471	D-2240	D-2393	D-792	–

## Hi-Temp TUF-Fil®

Hi-Temp TUF-Fil is ideal for the repair, build-up or alteration of tooling that will be subjected to operating temperatures up to 350°F. It features very good adhesion when used on composite tooling, metal, RenShape 5008, RenShape 5065, and wood materials. Hardener included.

SKU	Size	Color	Net weight (lb.)
053451	Quart	Dark Gray	2.5
053452	Gallon	Dark Gray	10
053453	3 Gallon Cartridge	Dark Gray	30

## TUF-Carv®

Freeman TUF-Carv Repair & Build-Up Material is a less dense material than TUF-Fil, closely matching the hardness of pine and jelutong. It is ideal for any job that requires a durable, yet carvable finish. TUF-Carv, when cured, can be carved, sawed, sanded, filed, tapped and machined easily with woodworking tools. Hardener included.

SKU	Size	Color	Net weight (lb.)
053205	Quart	Mahogany	1.8
053210	Quart	Pine	1.8
053215	Gallon	Mahogany	7
053220	Gallon	Pine	7
053225	3 Gallon Cartridge	Mahogany	21
053230	3 Gallon Cartridge	Pine	21

## Cream Hardener

This premium quality white catalyst is designed for use with all of the TUF Products. This product may also be used to catalyze other manufacturers' polyester filler products. The bright white color does not significantly change the color of the basic resin.

SKU	Size	Color	Net weight (lb.)
053445	1 oz. Tube	White	0.1
053450	4 oz. Tube	White	0.3

# MASTER REPAIR & BUILD-UP MATERIALS

## Quick Facts

Our Master line features high-quality, two-component polyester repair materials that offer:

- Thicker viscosities for ease of application on vertical walls
- Fast setting – sand or machine in 15 minutes
- Durable surfaces for excellent wear resistance
- Good chemical and water resistance, bonds well to most substrates

## Master® Quick-Bild II

Our most popular Master repair formulation offers a thick viscosity for excellent sag resistance on vertical walls, 85 Shore D hardness for superior wear resistance, and different-colored hardeners. This two-component, quick setting material hardens in 15 minutes, creating a durable repair to metal, plastic, and wood. Hardeners sold separately.

SKU	Size	Net weight (lb.)
053890	1 Quart (Resin Only)	3.5
053895	1 Gallon (Resin Only)	13.3
053815	Black Cream Hardener (For Quarts)	1 oz.
053825	Mahogany Cream Hardener (For Quarts)	1 oz.
053835	Pine Cream Hardener (For Quarts)	1 oz.
053445	White TUF Cream Hardener (For Quarts)	1 oz.
053820	Black Cream Hardener (For Gallons)	4 oz.
053830	Mahogany Cream Hardener (For Gallons)	4 oz.
053840	Pine Cream Hardener (For Gallons)	4 oz.
053450	White TUF Cream Hardener (For Gallons)	4 oz.

## Specifications

	Mix Ratio (by wt.) Resin: Hardener	Gel Time (Min)	Hardness (Shore D) @ 24 hr.	Viscosity (cps)	Density (g/cc)	Colors Available
Quick-Bild II	100:1.5	9	85	1,380,000	1.65	Mahogany, Pine, Black, White
Quick-Carve	100:1.5	10	69	400,000	1.13	Mahogany
Quick-Bild P80	100:1.5	10	70	580,000	1.13	Pine
ASTM	–	D-2471	D-2240	D-2393	D-792	–

## Master® Quick-Carve

Master Quick-Carve is a two-component polyester repair material that features good durability yet is easily carved or sanded when extensive hand finishing is required. Quick-Carve is excellent for fast repairs to wood patterns and is available as a mahogany-colored resin with included hardener.

SKU	Size	Net weight (lb.)
053910	1 Quart	1.8

## Master® Quick-Bild P80

This is the most economical polyester repair material in the Master line for larger and more frequent repairs. This two-component resin system solidifies in 15 minutes and features a 70 Shore D hardness for good durability. Its creamy consistency for ease of application and good sag resistance on vertical surfaces complements the pine resin color to match many of the softer woods used for patterns and models. Hardener included.

SKU	Size	Net weight (lb.)
053905	1 Gallon	7

# GENERAL PURPOSE REPAIR MATERIALS

## POLYESTER-BASED REPAIR MATERIALS

### Plas-Fil

This is an excellent compound for repairing defects in metal, fiberglass, and wood. Using the included red cream hardener (**SKU #053507**) as the catalyst, this paste material will solidify in approximately 15 minutes and is able to be sanded to a smooth, durable finish.

SKU	Size	Net weight (lb.)
412515	Gallon	7.8

### Dynalite™

Lightweight, carvable, sandable, and economically-priced, this polyester repair material is a useful material for a wide range of tooling alterations and repair. Includes red hardener (**SKU #0053501**).

SKU	Size	Net weight (lb.)
053502	Gallon	7.5
053507	Tube Hardener	4 oz.

### Platinum Polyester Repair Material

This lightweight, high-quality polyester filler compound adheres aggressively to steel, galvanized steel, and aluminum. Its smooth, creamy texture makes it easy to apply. Includes blue hardener (**SKU #053499**).

SKU	Size	Net weight (lb.)
053508	3-Gallon Cartridges (2)	21.6

### USC Base Coat/Clear Coat™

This polyester filler provides a smooth, self-leveling surface for high-quality repair projects and extra adhesion to galvanized, zinc-treated, and aluminum surfaces. Includes raspberry cream hardener.

SKU	Size	Mfg. No.	Net weight (lb.)
053510	Gallon	16060B	8.8

### Fillet Shapers

Made of high quality spring steel, this set of four fillet tools is ideal for creating fillets from any TUF product or any paste repair material. Each tool is 5¾" long and is ground to a smooth radius. Radius sizes are 1/16", 1/8", 3/16", 1/4", 5/16", 3/8", and 1/2". (**SKU #046375, set of 4**)



# EPOXY-BASED REPAIR MATERIALS

## Devcon DE087 Wear Resistant Putty

This blended, aluminum-filled putty repairs fatigued metal surfaces requiring exceptional durability and ruggedness. It repairs molds at the parting line where metal has been lost or worn and fills voids in castings.

SKU	Mfg. No.	Net weight (lb.)
054638	DE-087	20

## Devcon Aluminum Putty

Aluminum-filled epoxy putty bonds to aluminum and many other metals for dependable non-rusting repairs to castings, machinery and equipment. It fills porosity in aluminum castings and can be machined, drilled, or tapped using conventional metalworking tools.

SKU	Mfg. No.	Net weight (lb.)
054585	10610	1
054590	10620	3

## Devcon Fasmetal™ Putty

High-performance, alumina-filled epoxy is used for making fast and dependable emergency repairs to leaks in pipes carrying ores, coal, cement, sand, and gravel. It conveniently hardens in 5 minutes and can be applied in temperatures as low as 40°F.

SKU	Mfg. No.	Net weight (lb.)
054643	10780	0.75

## Devcon Plastic Steel® Putty

This putty can be used for hundreds of routine maintenance, production, and tooling applications and bonds to most metals, concrete, and some plastics. It can be drilled, tapped, machined, or painted. **SKU #054582** is a faster 5-Minute Putty.

SKU	Mfg. No.	Net weight (lb.)
054555	10110	1
054560	10120	4
054565	10130	25
054582	10240	1



## Devcon Titanium Putty

This titanium-reinforced epoxy is for making repairs to machinery and equipment that can be precision machined. It features excellent temperature resistance (350°F), high compressive strength, and resistance to many chemicals and most acids, bases, solvents, and alkalis.



SKU	Mfg. No.	Net weight (lb.)
054631	10760	1

## Dynaluminum

Dynaluminum is a hand-kneadable fast-curing epoxy putty that provides quick repairs to most metal, wood, glass, concrete, ceramics, and plastics.

SKU	Size	Net weight (lb.)
053650	¾" dia. x 7"	1

## Dynasteel

Dynasteel is similar to Dynaluminum but offers excellent lap shear strength for making repairs on any type of steel.

SKU	Size	Net weight (lb.)
053665	¾" dia. x 7"	1

## Lab-Metal & Lab-Solvent

Lab-Metal is an aluminum-filled, ready-to-use repair paste for metal and non-metal applications.

SKU	Size	Net weight (lb.)
027335	Lab-Metal (Quart)	3
027337	Hi-Temp Lab-Metal (Pint)	1.5
027330	Lab-Solvent (Pint)	1

This air-hardening, extremely durable formulation may be milled, drilled, tapped, and sanded smooth for a long-lasting repair. Both the standard (350°F) and Hi-Temp (1000°F) formulations work well for powder coating applications. Lab-Solvent thins the material for spray and brush applications.

# POLYURETHANE-BASED REPAIR MATERIALS

## SEM Adhesive & Repair Material

SEM Quick Set 180 is a two-component, general purpose, black urethane adhesive with a three-minute working time. It is designed for repairing and bonding most small to medium plastic, steel, aluminum, glass, SMC and fiberglass parts.

SKU	Description	Size
054288	Multi-Plastic Repair Material	8.5 fl. oz.
054289	Quick Set 180 Adhesive	8.5 fl. oz.
054290	Applicator Gun	
054283	Mixing Tips	6-pack

SEM Multi-Plastic Repair Material is a two-component epoxy for fast repairs on most flexible and semi-rigid plastics. The materials are packaged in dual mix cartridges with two nozzles. Applicator Gun and Mixing Tips are also available separately.

## RenPatch 5169 Foundry Board Repair Paste

RenPatch 5169 is a red polyurethane repair material that bonds securely to RenShape 5169 and RenShape 5179. It closely matches the boards in color, hardness, machinability, and thermal stability.

SKU	Size	Net weight (lb.)
056622	50 ml	0.2



SEM Adhesive & Repair Materials are packaged in dual mix cartridges dispensed by nozzles.

# EPOXY ADHESIVES



Freeman offers a broad line of two-component epoxy adhesives for bonding a wide range of metals and plastics. Epoxy adhesives consist of an epoxy resin plus a hardener. They allow great versatility in formulation since there are many resins and many different hardeners. They form extremely strong durable bonds with most materials, especially metals.

## Specifications

	Mix ratio by weight Resin:Hardener	Mix ratio by volume Resin:Hardener	Gel Time (min.) @ 72°F	Light Handling Time	Cure Time (hour) @ 72°F	Mixed Viscosity (cps)	Hardness (Shore D)	Lap Shear Strength (psi)	Peel Strength (pli)	Tensile Strength (psi)	Service Temp./Max (°F)	Color
<b>Freeman Fast Set 505</b>	1:1	1:1	3-5	15 min.	4	10,400	85	—	—	2,500	200	Clear
<b>Freeman Fast Set 506</b>	1:1	1:1	5	60 min.	4	15,000	80	—	—	8,000	266	Clear
<b>Freeman Fast Set 517</b>	1:1	1:1	15-20	3-4 hours	4	14,000	80	—	—	2,500	200	Clear
<b>3M Panel Bonding</b>	172:100	200:100	90	4 hours	24	100,000-225,000	—	—	—	—	180	Black
<b>ASI MP 5405</b>	1:1	1:1	3-5	15 min.	24	12,500	80	—	—	7,000	266	Clear
<b>Fastweld 10</b>	1:1	1:1	4	30 min.	4	250,000	85	2,840	—	3,850	—	Gray
<b>Devcon 5-Minute</b>	1:1	1:1	4	45 min.	45 min.	8,000-10,000	85	1,400	2	1,400	200	Clear
<b>Araldite 2012</b>	1:1	1:1	4	20 min.	1.75	30,000	82	2,700	31	—	175	Yellow
<b>Araldite 2013</b>	100:60	1:1	75	4 hours	10	Paste	80	2,600	23	5,000	160	Gray
<b>Araldite 2014</b>	2:1	2:1	80	4 hours	5	90,000	84	2,600	17	5,500	285	Gray
<b>Araldite 2015</b>	1:1	1:1	40	4 hours	10	Paste	75	2,400	29	3,400	212	Beige
<b>AY557/HY557</b>	1:1	1:1	4	10 min.	4	14,000	83	2,560	—	4,630	—	Clear
<b>AW1258/HV1258</b>	1:1	1:1	23	4 hours	6	Paste	89	2,840	—	5,600	—	Gray
<b>AV8503/HV8503</b>	100:92	1:1	30	3 hours	24	250,000	78	3,380	—	3,400	250	Blue-Green
<b>AW8594/HY994</b>	100:40	100:55	75	—	—	7,500	85	3,410	—	6,600	164	White
<b>AW8595/HW8595</b>	—	1:1	60	4 hours	16	29,000	70	2,600	—	2,200	141	Clear
<b>Araldite 8579</b>	100:40	100:40	60	8 hours	8	125,000	—	2,500	—	—	248	Gray
<b>TDR-1100-11</b>	100:42	2:1	95	8 hours	24	13,000	85	4,100	—	9,000	195	Clear
<b>ASTM</b>	—	—	D-2471	—	—	D-2393	D-2240	D-5868	—	D-1002	—	—

## Basics of Adhesive Chemistries

### Epoxy

- Strong, durable bonds
- Wide range of working times to choose from
- Excellent bond with metals

### Methacrylates

- Toughened & modified type of acrylic
- High strength & toughness
- Supplied as two parts (resin and catalyst)
- Tolerates minimal surface preparation
- Bonds well to wide range of materials
- Wide range of fast-curing speeds
- Liquids or pastes, gap-fills up to 5mm

### Cyanoacrylates

- Cures through reaction with moisture
- Works best with close-fitting joints
- Solidifies in seconds
- Suited to small plastic parts and rubber

### Polyurethanes

- Generally flexible, good for bonding different materials
- Used when a flexible bond line is required
- Strong resilient joints resistant to impact
- Bonds GRP (glass fiber-reinforced plastics) and thermoplastic materials

### Hot Melts

- Based on modern polymers, related to sealing wax
- For fast assembly of lightly-loaded foundry cores

# EPOXY ADHESIVES CONTINUED

## Freeman Fast Set 505 Epoxy Adhesive

Freeman Fast Set 505 is a rapid-curing, two-component epoxy adhesive. With a gel time of 5 minutes, parts glued can be handled in 15 minutes. The 1:1 ratio, color indicator, and available pumps (below) ensure complete and easy mixing. It is excellent for bonding metal, wood, ceramic, fiberglass, and most RenShape modeling and styling boards. The 50 ml cartridges include one static mix nozzle.

SKU	Size	Net weight (lb.)
055352	50 ml	0.12
055350	Pint	2
055360	Gallon	16
055360	5 Gallon	90

## Freeman Fast Set 506 Epoxy Adhesive

Freeman Fast Set 506 is a stronger adhesive for difficult to bond materials and is recommended for adhering leather fillet. Its 60-minute handling time and heat resistance up to 266°F make it a good choice for thermoforming applications.

SKU	Size	Net weight (lb.)
055347	2 pint	2

## Freeman Fast Set 517 Epoxy Adhesive

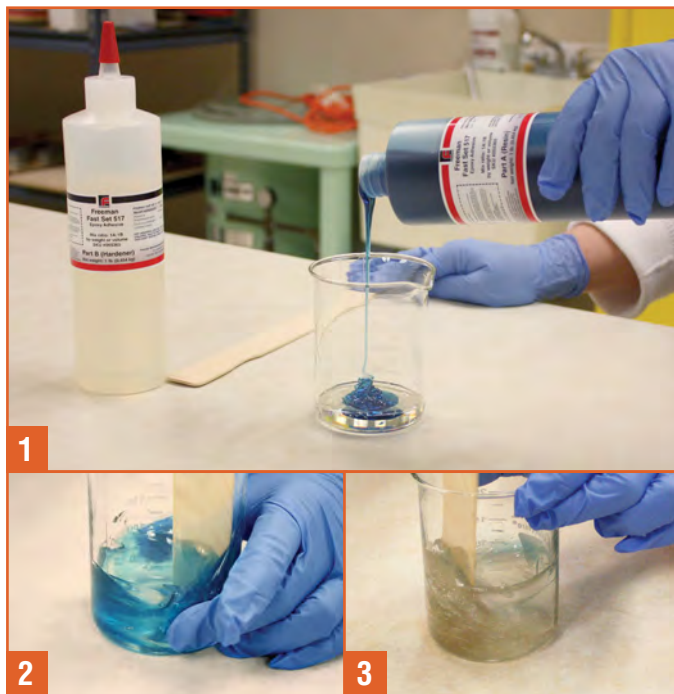
Freeman Fast Set 517 is similar to Fast Set 505 yet has a 15-20 minute gel time and 3-4 hour handling time.

SKU	Size	Net weight (lb.)
055365	Pint	2
055366	Gallon	16
055369	5 Gallon	90

## Pumps for Freeman Fast Set 505 & 517

These pumps are sold separately and work with the Fast Set 505 and 517. They are calibrated for 1:1 mix ratio materials.

SKU	Size
055361	1 Pump
055362	2 Pumps



Fast Set 505 and Fast Set 517 now offer a color indicator for proper mixing. The material changes from blue to clear to indicate a complete mix.

## 3M Panel Bonding Adhesive

3M Panel Bonding Adhesive is a two-part epoxy adhesive with extended work time. It exhibits an excellent adhesion to wood, metal substrates, and a wide variety of plastics. This adhesive works well when bonding carbon fiber laminate with aluminum and wood reinforced framing. 3M Panel Bond is black in color and blends very nicely when cured.

SKU	Size	Net weight
135533	200 ml	0.65

## ASI MP 5405 Epoxy Adhesive

ASI MP 5405 is a two-part unfilled epoxy adhesive designed for ceramics and most plastics.

SKU	Size	Net weight (lb.)
414850	50 ml (Clear)	0.2
414856	50 ml (Black)	0.2

It cures to a tough, semi-rigid material and is free flowing in viscosity. It features good resistance to water, salt spray, inorganic acids and bases, and most organic solvents. It was specially formulated to a 1:1 mix ratio for use in either dispensing equipment or side-by-side dual cartridges.

## Fastweld 10 Epoxy Adhesive

This fast-setting epoxy adhesive is ideal for bonding small parts for repair work. Fastweld 10 will cure at temperatures as low as 5°C (41°F).



SKU	Size	Net weight (lb.)
056505	50 ml	0.12
056512	9 oz. Tube	0.56
056511	9 oz. Tubes (Case of 24)	13.5

## Devcon 5-Minute Epoxy

A widely popular, rapid-curing, low viscosity, general-purpose adhesive and/or encapsulant which easily dispenses, mixes in seconds, and dries in 15 minutes with full strength in 1 hour. It bonds rigid durable substrates such as metals, glass, ceramics, concrete, and wood in all combinations, forming a clear hard rigid bond that self-levels in minutes.

SKU	Size	Mfg. No.	Net weight (lb.)
054647	50 ml	14270	0.12
054618	2.5 oz. Tube	14210	2.5
054620	15 fl. oz.	14200	1
054634	9 lb.	14630	9

# ARALDITE 2000 SERIES EPOXY ADHESIVES

The Araldite line of two component epoxy adhesives is a diverse selection engineered to bond a wide variety of materials, including the most challenging metals, composites, and thermoplastics. With various formulations and gel times ranging from 4 minutes to 1½ hours, Araldite is the most versatile line of adhesives for a wide range of bonding applications.

## Araldite 2010-1 Epoxy Adhesive

This fast-setting epoxy adhesive is ideal for 056400 50 ml 0.13 bonding metal, ceramics, rubber, plastics, and glass. Araldite 2010-1 features a 10 minute gel time, a handling strength of 30 minutes, and a thick viscosity for vertical applications.

SKU	Size	Net weight (lb.)
056400	50 ml	0.13

## Araldite 2011 Epoxy Adhesive

This two-component epoxy adhesive has a high shear strength and good resistance to dynamic loading. It features room temperature cure and long 120-minute work life. It also offers strong bonding to metals, ceramics, rubbers and rigid plastics.

SKU	Size	Net weight (lb.)
056768	50 ml	0.12
056769	200 ml	0.5
056447T	Two 3.6 oz. Tubes	0.5
056447	Two 3.6 oz. Tubes (Case of 24 sets)	10.9
056480Q	Quart	4
056480	6 Quarts	24
056409	2 Gallons (Resin)	17.6
056463	2 Gallons (Hardener)	14.1

# OTHER ARALDITE EPOXY ADHESIVES

## Araldite AY 557 / HY 557 Epoxy Adhesive

This epoxy adhesive is fast setting for quick repairs on small parts. Suggested for metal bonding, this material also works for gluing most tooling boards and some plastics. The 1:1 mix ratio and 10-minute handling strength makes this adhesive easy to use for fast gluing.

SKU	Size	Net weight (lb.)
056482	50 ml	0.18
056483	5 Gallon (Resin)	45
056484	5 Gallon (Hardener)	45

## Araldite AV 1258 / HV 1258 Epoxy Adhesive

This aluminum-filled, general-purpose paste machines easily and is recommended for general bonding, repair, and gap filling. It is well suited for industrial maintenance applications and approved by the armed forces for making emergency repairs in the field.

SKU	Size	Net weight (lb.)
056641	11 oz. Tube	0.7
056507	11 oz. Tube (Case of 24)	16.5
056499Q	Quart (Resin)	3
056501Q	Quart (Hardener)	3
056499	6 Quarts (Resin)	18
056501	6 Quarts (Hardener)	18
056407	Gallon (Resin)	22
056427	2 Gallons (Hardener)	22

## Araldite AV 8503 / HV 8503 Epoxy Adhesive

This high-viscosity, two-component epoxy adhesive is specifically designed for bonding sheet molding compound (SMC). It can be heat accelerated for faster curing and has a maximum service temperature of 250°F.

SKU	Size	Net weight (lb.)
056758	6 Quarts (Resin)	14.5
056759	6 Quarts (Hardener)	13.4

## Araldite 2012 Epoxy Adhesive

This tough epoxy adhesive features high shear strength and a 4-minute work life. It cures at room temperature and offers a strong bond to metals, ceramics and rubbers.

SKU	Size	Net weight (lb.)
056452	50 ml	0.13

## Araldite 2013 Epoxy Adhesive

This gap-filling epoxy adhesive features good environmental stability and chemical resistance. It is ideal for use on metals, ceramics and rubbers.

SKU	Size	Net weight (lb.)
056453	50 ml	0.18
056471	200 ml	0.71

## Araldite 2014 Epoxy Adhesive

This gap-filling, no-sag epoxy adhesive features excellent resistance to water and chemicals as well as a 250°F heat resistance. It cures at room temperature and is ideal for use on metals and electronic components.

SKU	Size	Net weight (lb.)
056454	50 ml	0.18
056466	200 ml	0.71
056481	6 Quart	24

## Araldite 2015 Epoxy Adhesive

This sag-resistant, tough epoxy adhesive with good shear strength cures at room temperature. It is ideal for metals, sheet molding compounds and fiberglass reinforced parts.

SKU	Size	Net weight (lb.)
056770	50 ml	0.16
056771	200 ml	0.71
056497	6 Quart	24

## Araldite AW 8594 / HY 994 Epoxy Adhesive

Araldite AW 8594 / HY 994 is a two-part laminating system for fabricating snow skis, snowboards, and other composite parts. A heat cure is recommended for optimal results.

SKU	Size	Net weight (lb.)
056438	5 Gallon (Resin)	52
056414	5 Gallon (Hardener)	34.5

## Araldite AW 8595 / HW 8595 Epoxy Adhesive

This epoxy adhesive has a medium viscosity of 21,000 cps for good gap filling properties. Translucent in color, 8595 has excellent flexibility and bonds to a variety of substrates.

SKU	Size	Net weight (lb.)
056638	50 ml	0.18

## Araldite 8579 Epoxy Adhesive

Araldite 8579 is a gray, thixotropic, room-temperature curing paste that spreads easily and has good gap-filling characteristics. Heat resistant to 248°F, it offers good chemical resistance.

SKU	Size	Net weight (lb.)
056479Q	Quart (Resin)	2.2
056478Q	Quart (Hardener)	0.9
056479	6 Quarts (Resin)	13.2
056478	6 Quarts (Hardener)	5.3

## Araldite TDR 1100-11 Epoxy Adhesive

This tough epoxy adhesive is perfect for bonding fiberglass, plastics, and wood. It displays excellent results when heat cured above 170°F. It is an ideal adhesive for archery bow construction.

SKU	Size	Net weight (lb.)
056419	5 Gallon (Resin)	35
056420	5 Gallon (Hardener)	35

# METHACRYLATE ADHESIVES



Freeman offers ASI and Devcon two-component methacrylate adhesives. All are formulated for easy handling and are generally excellent for bonding thermoplastics, composites, and some metals. Methacrylates are usually the best choice for bonding dissimilar substrates.

## Specifications

	Mix ratio by weight Resin:Hardener	Mix ratio by volume Resin:Hardener	Gel Time (min.) @ 72°F	Light Handling Time	Cure Time (hour) @ 73°F	Mixed Viscosity (cps)	Hardness (Shore D)	Lap Shear Strength (psi)	Peel Strength (pli)	Tensile Strength (psi)	Serviceable Temp./ Max (°F)	Color
<b>MP 55300</b>	1:1	1:1	4-6	10-15	-	60,000	-	3,000-3,500	-	3,000-3,500	250	Amber
<b>MP 55305</b>	1:1	1:1	3-5	6-10	-	60,000	-	2,500	-	2,500	250	Off-White or Black
<b>MP 55310</b>	1:1	1:1	10-18	20-35	-	60,000	-	3,000-3,500	-	3,000-3,500	250	Off-White
<b>MP 55420</b>	10:1	10:1	4-6	9-13	-	90,000	-	2,800	-	2,500	250	Off-White
<b>Plastic Welder</b>	-	1:1	4-6	45-60	24 hrs	50,000	78	-	35-40	3,000	250	White or Black
<b>ASTM</b>	-	-	D-2471	-	-	D-2393	D-2240	-	-	-	-	-

### ASI MP 55300 Methacrylate Adhesive

MP 55300 forms tough, durable bonds to many substrates including plastic, composites and metal.

SKU	Size	Net weight (lb.)
415150	50 ml	0.3
415152	400 ml	1.3
415151	10 Gallon Kit	90

Surface cleaning or preparation is not required in most cases or the use of primers or chemical wipes.

### ASI MP 55305 Methacrylate Adhesive

MP 55305 is a 1:1 mix ratio adhesive designed for bonding a wide range of thermoplastics, composites, and metals. MP 55305 has excellent impact resistance and is thixotropic

SKU	Size	Net weight (lb.)
415156	50 ml	0.2
415158	400 ml (Off-White)	1.3
415159	400 ml (Black)	1.3

for applications on vertical surfaces. This product is fast curing with a 3-5 minute working time and parts may be handled in 6-10 minutes.

### ASI MP 55310 Methacrylate Adhesive

MP 55310 is a 1:1 mix ratio adhesive that features a long work time of 10-18 minutes for bonding larger parts. It is excellent for gluing composites, thermoplastics, and metals. This product also has good chemical and impact resistance as well as exceptional flexibility.

SKU	Size	Net weight (lb.)
415162	50 ml	0.2
415164	400 ml	1.3
415166	10 Gallon Kit	80.6

### ASI MP 55420 Methacrylate Adhesive

MP 55420 is a 10:1 mix ratio adhesive that features a 4-6 minute working time for fast assembly of plastic, metal, or composite parts. Parts may be handled in 15-20 minutes. Fully cured parts bonded with MP 55420 have excellent resistance to thermal cycling and resistance to a wide range of chemicals.

SKU	Size	Net weight (lb.)
415199	380 ml	1

### Plexus MA 300 Methacrylate Adhesive

This toughened structural adhesive is formulated for bonding difficult-to-bond

SKU	Mfg. No.	Color	Net weight (lb.)
054651	IT410	Black	50 ml
054652	30500	White	50 ml

substrates such as nylon containing alloys, modified polyesters, epoxy composites and standard plastics. This 1:1 mix ratio methacrylate features superior bond strength, durability, and impact resistance. It has a creamy consistency with excellent gap-filling capabilities and good peel strength in all environments.

ADHESIVES & REPAIR MATERIALS



# CYANOACRYLATE ADHESIVES

Freeman offers a complete line of single component cyanoacrylate adhesives and accessories for various bonding applications. These fast-setting materials are designed for metal, wood, plastic, and tooling board adhesive requirements.

## Freeman F-Bond Instant CA Adhesives

**F-Bond Thin:** General purpose and extremely fast setting.

**F-Bond Medium:** Rapid-setting medium viscosity adhesive with excellent flexibility.

**F-Bond Thick:** Rapid-setting high viscosity, ideal for gap-filling applications.

**F-Bond Gel:** Thixotropic formulation allowing for vertical applications.

**F-Bond Flex Black:** Formulated with a flexible rubber filler which allows for high vibration and shock applications.



SKU	Size	Viscosity level	Viscosity (cps)
055300	2 oz.	Thin	3
055307	8 oz.	Thin	3
055319	1 lb.	Thin	3
055301	2 oz.	Medium	250
055308	8 oz.	Medium	250
055302	2 oz.	Thick	1500
055309	8 oz.	Thick	1500
055320	1 lb.	Thick	1500
055303	20 g.	Gel	Thixotropic
055311	2 oz.	Flex Black Thick	1500

## Freeman F-Bond Accessories

**F-Bond Accelerator:** Accelerates cure time and increases gap-filling capabilities

**F-Bond Dosing Tips:** High-quality precision application replacement tips for our 2 oz. bottles

**F-Bond Piercing Cap:** A needle point cap to prevent dispenser clogging

SKU	Description	Size
055304	Accelerator (w/pump)	2 oz.
055324	Accelerator Aerosol	10 oz.
055305	Accelerator	8 oz.
055315	8 oz. Cap	
055314	Dosing Tips	
055316	Piercing Cap	

## Devcon ZipGrip® GPE3 Adhesive

This low viscosity (20 cps), single-component cyanoacrylate

adhesive is for close-fitting parts. ZipGrip bonds in seconds to rubber, fixturing rubber gaskets, splicing o-rings, repairing plastics and metals. It is also highly resistant to aging and weathering.

SKU	Size	Mfg. No.
054629	14 grams	70144

## ASI NI Series Adhesive

ASI NI 1000 is a clear, Butyl-based instant adhesive that reduces frosting on parts and the need for sophisticated ventilation. ASI NI 1000 will cure in 15 seconds.

SKU	Size
413760	2 oz.

## ASI Cyanoacrylate Accessories

QUICK-TAC can be brushed or sprayed and provides faster set times. It is ideal for bonding porous materials such as fabrics or woods, filling gaps up to 0.20", bonding acidic surfaces,

or low-humidity conditions. Quick-Tac 2 is acetone-based and Quick-Tac 4 is heptane-based. Debonder is a single-component material that removes cured adhesive from work stations and also flushes and cleans dispensing systems.

SKU	Description	Size
414014	QUICK-TAC 4	2 oz.
414018	QUICK-TAC 4	8 oz.
414004	QUICK-TAC 2	1 Gallon
414108	Debonder	2 oz.

# REN TOOLING BOARD ADHESIVES

## DunaBond

DunaBond 3206 and 3140 are single-part urethane adhesives

developed for RenShape Foam Boards. They can also be used to bond polystyrene, phenolic, metals, fiberglass laminates, wood and concrete. DunaBond 3206 offers a working time of 15-18 minutes and DunaBond 3140 offers a working time of 35-40 minutes.

SKU	Size	Net weight (lb.)
415830	3140 (35 oz.)	2.2
415831	3206 (35 oz.)	2.2

## Ren-Weld 103

This light yellow epoxy adhesive is formulated for the effective bonding of RenShape Foam, Modeling, Styling, and Tooling Boards. Ren-Weld 103 has a 2,100 cps viscosity for ease of application yet contains flow control agents to prevent excessive resin run-out. Other features include a 20 minute gel time and a 10 hour handling strength.

SKU	Size	Net weight (lb.)
056506	Gallon Kit	10

## Ren-Weld 5008

Ren-Weld 5008 is a medium-speed adhesive that is hardness and color matched for RenShape 5008. It has a 75 minute gel time and reaches full strength after 24 hours. The cure time may be accelerated by heating the material to 200°F for 4 hours.

SKU	Size	Net weight (lb.)
056108	Gallon Kit	6



## Ren-Weld 5169

This red urethane adhesive is designed for gluing RenShape 5169 and 5179 Foundry Boards. Ren-Weld 5169 has a 1:1 mix ratio by volume, 8-13 minute gel time, 80D Shore hardness, and an 8-10 hour handling strength.

SKU	Size	Net weight (lb.)
056620	Quart Kit	4

## SEE ALSO

Product	Page #
RenShape Boards	9
Repro Ultra Light for RenShape Foam Boards	25
Repro Light for medium density boards	25
RenLam 1700-1 for medium density boards	51

# POLYURETHANE ADHESIVES

## Specifications

	Mix ratio by weight Resin:Hardener	Mix ratio by volume Resin:Hardener	Gel Time (min.) @ 72°F	Light Handling Time (hr.)	Cure Time (hr.) @ 73°F	Mixed Viscosity (cps)	Hardness (Shore A)	Lap Shear Strength (psi)	Peel Strength (pli)	Tensile Strength (psi)	Color
<b>AW 8680/HW 8680</b>	93:100	1:1	15	10	48	50,000	30D	—	—	1,100	Gray
<b>Araldite 2040</b>	93:100	1:1	15	10	24	50,000	30D	1,700	—	1,100	Gray
<b>Araldite 2041</b>	80:100	1:1	12	4	16	50,000	85	2,800	—	2,100	Pink
<b>Araldite 2042</b>	80:100	1:1	2.5	1	6	50,000	85	2,800	—	2,100	Pink
<b>AW 8680/HW 8685</b>	80:100	1:1	8-10	2	12	34,000	85	2,900	—	2,100	Black
<b>AW 8683/HW 8683</b>	100:60	100:60	15	—	24	2,750	95	—	100	3,500	Off-White
<b>ASTM</b>	—	—	D-2471	—	—	D-2393	D-2240	D-1002	—	D-638	—

### Araldite AW 8680 / HW 8680

This general-purpose adhesive remains flexible once cured. It is well suited for bonding polycarbonate, nylon, other plastics and primed metals.

SKU	Size	Net weight (lb.)
056417	6 Quarts (Resin)	12.8
056418	6 Quarts (Hardener)	13.8

### Araldite 2040

This flexible general-purpose adhesive offers a 15 minute work time and a light handling time of 10 hours that can be accelerated with heat. Araldite 2040 is best used for bonding plastic, polycarbonate and nylon.

SKU	Size	Net weight (lb.)
056456	50 ml	0.13

### Araldite 2041

Araldite 2041 offers excellent environmental stability and impact resistance. It has a 15 minute work time and bonds polycarbonate ABS, FRP, SMC, nylon and can also be used on primed metals.

SKU	Size	Net weight (lb.)
056457	50 ml	0.13

### Araldite 2042

This environmentally stable and impact-resistant adhesive offers a fast work time and light handling time that can be accelerated with heat. It is suitable for bonding polycarbonate ABS, FRP, SMC and nylon, and materials with different coefficients of thermal expansion.

SKU	Size	Net weight (lb.)
056458	50 ml	0.13
056466	200 ml	0.5

### Araldite AY 8680 / HY 8685

This two-part adhesive is specifically formulated for bonding plastics. It bonds well to polycarbonate, ABS, nylon and other plastics.

SKU	Size	Net weight (lb.)
056173	50 ml kit	0.13
056766	5 Gallon (Resin)	43
056767	5 Gallon (Hardener)	50

### Araldite AY 8683 / HY 8683

This two-part elastomeric adhesive is formulated for filter-bonding applications.

SKU	Size	Net weight (lb.)
056439	5 Gallon (Resin)	40
056441	5 Gallon (Hardener)	24

Its low viscosity allows convenient mixing by hand or meter-mix equipment.

# HOT MELT FOUNDRY ADHESIVES

Manufactured by Power Adhesives LTD. and specifically formulated for instant bonding of foundry cores, these hot melt adhesives are comprised of 100% solids, containing no solvents or water.

### Tecbond® 501 Foundry Adhesive

This material has a low viscosity for easy flow. It can be applied at 385°F and has a heat resistance of up to 350°F. Each rigid stick is 1¼" in diameter and 1½" long for maximum glue flow.

SKU	Diameter	Length	Net weight (lb.)
176071	1.75"	1.625"	22

### Tecbond® 601 Foundry Adhesive

Tecbond 601 is higher in viscosity and faster setting than Tecbond 501. It is applied at 385°F and can tolerate temperatures up to 185°F. Each rigid stick is 1¼" in diameter and 1½" long for maximum glue flow.

SKU	Diameter	Length	Net weight (lb.)
176072	1.75"	1.625"	22

### Tec® 3400 Hot Melt Glue Applicator

This updated applicator is for applying 1.75" diameter hot melt adhesives. This lightweight model features a 400 watt stainless steel heater cartridge, 4-minute warm up, and a precision controller that detects various fault conditions to protect the tool. The Tec® 3400 operates on standard 110 voltage and includes a one-year warranty. (SKU # 176074)



# DIE MAKING ADHESIVES



*A diemaker uses DieStrip Adhesive to secure ejection rubber (page 110) next to the steel rule (page 109).*

## Z-Bond™

This water-based PSA adhesive is formulated for slick UV-Coated dieboards. It bonds easily and removes with no residue.

SKU	Size	Net weight (lb.)
055996	8 lb. tub	8
055997	1 lb. bottle	1

## BirchBond™

Birch Bond is an excellent adhesive for bonding birch dieboard. Easily and quickly applied with brush or roller, BirchBond offers a high built-in wet tack that helps prevent board movement during clamping.

SKU	Size	Net weight (lb.)
022710	Gallon	9
022715	5 Gallon	45

## DieStrip™ Adhesive

This reliable latex adhesive for flat die rubber grips securely and strips cleanly when re-rubbing the die. Rubber can easily be pulled off by hand or scraped off with a wood chisel, leaving little to no residue.

SKU	Size	Net weight (lb.)
055994	Gallon	8

## SEE ALSO

Product	Page #
F-Bond Adhesives & Accessories	81



# WOOD GLUE

## Freeman Medium Viscosity White Wood Glue

SKU	Size	Net weight (lb.)
022128	Gallon	9
022640	5 Gallon	45

Freeman Medium Viscosity White Wood Glue is a polyvinyl acetate adhesive that offers a great balance of set time, viscosity, and holding strength. It is extremely effective for gluing most all species of hardwood and softwood.

## Freeman High Viscosity White Wood Glue

SKU	Size	Net weight (lb.)
023639	Gallon	9
023640	5 Gallon	45

Freeman High Viscosity White Wood Glue is a thicker version of our Medium White Wood Glue for vertical applications or where a higher viscosity adhesive is preferred. It is extremely effective for gluing most all types of wood and is excellent for installing leather fillets due to the increased viscosity.

## Freeman Fast Set White Wood Glue

SKU	Size	Net weight (lb.)
022663	Gallon	9
022664	5 Gallon	45

The fastest-setting wood glue we offer, it is used for assembly work where rapid hardening is required. Works well with all types of hardwood and softwood.

## Freeman Gold Wood Glue

SKU	Size	Net weight (lb.)
023635	Gallon	9
023636	5 Gallon	45

Light yellow in color, this glue features a high viscosity and fast set time, making it ideal for assembly and fillet work.

## Master White Wood Glue

SKU	Size	Net weight (lb.)
022700	Gallon	9
022705	5 Gallon	45

Master White Wood Glue has a high built-in wet tack that helps prevent board movement during clamping. It is ready for use requiring no mixing, blending or heating and can be used at temperatures as low as 60°F. Easily and quickly applied with brush or roller, it can bond dissimilar materials such as wood, cork, oil-free leather, plastics and metals.

## Wood Glue Applicator Bottles

These non-stick, empty plastic glue bottles in popular and convenient sizes are available for pattern shop use. The screw-on plastic spout, which can be cut to desired opening size, gets the glue into the tight places.

SKU	Size
023658	2 oz. (Bottle w/Spout)
023660	8 oz. (Bottle w/Spout)
023665	16 oz. (Bottle w/Spout)
023670	Quart (Bottle w/Spout)
023673	2 oz. (Spout Only)
023662	8 oz. (Spout Only)
023672	16 & 32 oz. (Spout Only)

# OTHER SPECIALTY ADHESIVES

## Sheet Wax Spray Adhesive

Sprayway Number 66 is the easiest way to coat plain sheet wax for fabrication. It can also be used on paper, plastics, leather, metal or glass.

SKU	Size
054510	15.6 fl. oz.

## 3M™ Super 77™ Multipurpose Adhesive

Super 77 Spray Adhesive is a fast-drying, general-purpose adhesive designed for permanently attaching fabric, paper, plastics, and light-weight foams to rigid-base materials.

SKU	Mfg. No.	Net weight (lb.)
054516	21210-9	24 fl. oz.

## 3M™ Polystyrene Foam Insulation 78 Spray Adhesive

This adhesive creates a high-temperature resistant bond while providing a work time ideal for polystyrene panel bonding, roofing membrane attachments, and foam boards.

SKU	Mfg. No.	Net weight (lb.)
054514	41593-7	16.25 fl. oz.

## 3M™ Hi-Strength 90 Spray Adhesive

High Strength 90 Adhesive bonds to concrete, wood, MDF, laminates, polyethylene and more. Extreme high-strength and fast-tack adhesive provides strong permanent bond. Ideal adhesive for decorative laminates, particleboard, and many other materials, even polyethylene, polypropylene, and SBR rubber. 1 minute dry time for fast, extremely strong permanent results and high productivity.

SKU	Mfg. No.	Net weight (lb.)
054515	30023-3	24 fl. oz.

## Superbond Special Adhesive

Superbond is a high-strength hot melt adhesive specially designed for instantly and firmly joining waxes used in the lost wax casting process. Clean burn-out is assured.

SKU	Size	Net weight (lb.)
119560	Tray	1

# DISPENSING GUNS AND STATIC MIX NOZZLES

## 50 ml Conversion Kit

This conversion kit is an economical alternative to a dedicated dispensing gun when you do not require a high volume of 50 ml cartridges. It is suggested for use with a standard 9" caulking gun. (SKU #415480)

## Adhesive Dispensing Guns

These dispensing guns are designed for a variety of materials and are available in a wide range of sizes.

SKU	Size	Method	Features
056460	50 ml	Manual	Includes two inserts for 1:1 and 2:1 mix ratios.
056462	200 ml	Pneumatic	Designed for 200 ml cartridges.
056598	200 ml	Manual	Designed for 200 ml cartridges.
415476	380 ml	Manual	Designed for coaxial 380 ml cartridges and ASI 10:1 mix ratio materials.
415478	400 ml	Manual	Designed for Huntsman, Araldite, and ASI 400 ml cartridges.
415479	490 ml	Manual	Designed for ASI 490 ml cartridges.

## 50 ml Static Mix Nozzles

These 50 ml static mix nozzles are available in various shapes, lengths, and with a range of features to suit your adhesive dispensing needs.

SKU	Shape	Length	Inside Diameter	Elements	Features
056488	Round	6"	0.250"	21	Conventional, most widely used in industry
415802	Square	4.03"	0.203"	20	Two-thirds the length of round spiral mixers, less adhesive waste, fits nearly all 50 ml cartridges
056510	Mini	2.5"	0.125"	17	Least adhesive waste, suitable only for lower-viscosity adhesives

## 200/380/400/490 ml Static Mix Nozzle

These static mix nozzles effectively and completely mix adhesives for a variety of gun sizes. 415800 can be used with the 200, 380, and 400 ml dispensing cartridges. 415803 is designed for the 490 ml cartridges.

SKU	Shape	Length	Inside Diameter	Elements	Features
415800	Square	5" (mixing)	3/8"	24	Includes integral nut, eliminating need for individual retaining nut
415803	Square	8.5" (overall)	10 mm	24	

400 ml Manual Dispensing Gun

200 ml Manual Dispensing Gun

50 ml Manual Dispensing Gun

