

TECHNICAL DATA

Product Description

Mult-E-Poxy 180 Epoxy Mastic is a high solids, high build, epoxy formulated to provide a variety of substrate types the ultimate in protection even when exposed to extreme environments. Mult-E-Poxy 180 protects against abrasion, moisture, corrosive fumes, and chemicals. Its ability to be applied as a mastic to tightly adhering rust, damp surfaces, and most tightly adhered, existing coatings makes it a unique choice for difficult substrates. Mult-E-Poxy 180 is suitable for immersion service. It cures through a wide range of temperatures from 0°F (-17.8°C) to 120°F (48.9°C). Mult-E-Poxy 180 can be used as an intermediate coat or finish over zinc rich primers.

Intended Uses

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|---------------------------------|----------------------|-----------------------------|--------------------------------|
| | Apply to: | | Protects: |
| • Interior or exterior surfaces | • Ferrous metal | • Tanks and storage vessels | • Equipment |
| • Galvanized metal | • Aluminum | • Conveyors | • Material handling facilities |
| • Masonry surfaces | • Zinc rich products | • Processing plants | • Structural or support steel |
| • Composites | | • Power generating plants | • Petro chemical |

The above are general recommendations and not intended to limit the use of Mult-E-Poxy 180. Test areas are always recommended to confirm results.

Physical Properties

Resin Type	2 Component Polyamide Epoxy Mastic				
Finish/Sheen	Semi-Gloss, 45–55 @ 60°				
Colors	Cotton White, Silver Gray, Jet Black, Safety Red, Safety Yellow, Safety Orange, Safety Blue, Safety Green and Aluminum. Can also be tinted to ICS Color System.				
Bases (Part A)	White Base LF-1231, Deep Base LF-1233, Clear Base LF-0235 Tintable in "ICS"				
Cure (Part B)	Standard Cure LM-0216, Fast Dry/Low Temperature Cure LM-0217				
Solids by Weight	87.2 % ± 2%				
Solids by Volume	79% ± 2%				
Theoretical Coverage	1270 ft ² /gal @ 1 mil				
Dry Film Thickness / Coat	5.0–10.0 mils (125–250 microns)				
Wet Film to Achieve DFT	6.3–13.0 mils (157.5–325 microns)				
Coverage at DFT*	127–254 ft ² /gal @ 5.0–10.0 mils DFT				
VOCs	Maximum 1.92 lbs./gal (230 grams/liter) Activated (no colorant added)				
Reduction Solvents	Standard Cure: Diamond Vogel N-3023 Xylol (up to 1/2 pint per gallon) FD Cure: Diamond Vogel N-3023 Xylol (up to 1/2 pint per gallon) Maximum VOC Does Not Exceed 2.37 lbs./gal (284 g/L) activated and reduced				
Clean-up Solvents	Diamond Vogel N-3023 Xylol				
Induction Time	None				
Mixing Ratio (by volume)	1 part resin to 1 part cure. Product packaged in premeasured kits.				
Pot Life **	Standard Cure is 2–3 hours at 70°F (21°C) and 50% Relative Humidity FD Cure is ½–1 hour at 70°F (21°C) and 50% Relative Humidity				
Drying Time*** ASTM D1640					
Set to Touch (hours)	At 90°F (32°C)	At 70°F (21°C)	At 50°F (10°C)	At 32°F (0°C)	At 20°F (-6.7°C)
Mult-E-Poxy 180	3 hours	4 hours	10 hours	20 hours	N/A
Mult-E-Poxy 180FD/LT Cure	2 hours	3 hours	6 hours	11 hours	48 hours
Dry Through***					
Mult-E-Poxy 180	4 hours	9 hours	28 hours	80 hours	N/A
Mult-E-Poxy 180FD/LT Cure	3 hours	7 hours	14 hours	38 hours	96 hours

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Physical Properties (Continued)

Recoat/Topcoat Time***[At 70°F (21°C)]	Minimum Recoat	Maximum Recoat
Multi-E-Poxy 180 with itself	9½–11 hours	12 months
Multi-E-Poxy 180FD/LT Cure with itself	7–9 hours	12 months
Multi-E-Poxy 180 w/other coatings	9½–11 hours	2 months
Multi-E-Poxy 180FD/LT Cure w/other coatings	7–9 hours	1 months

* Coverage rates are estimates based on the products volume solids and make no allowance for material loss during application. Actual spread rates may vary dependent on applicator experience, surface porosity and texture.

** Extreme temperatures can dramatically shorten pot life.

*** Dry and recoat times vary with surface temperature, air movement, humidity and film thickness. Standard cure time for immersion is 7 days. Fast Dry cure time for immersion is 3½ days. Finish coat selection may extend maximum recoat, please request additional information by contacting Diamond Vogel Technical Service for detailed information.

Performance Characteristics

Multi-E-Poxy 180 meets or exceeds the following performance testing criteria:

Test Name	Test Method	Results
Abrasion Resistance	ASTM D 4060, CS-17 Wheel 1kg Load, 1000 Cycles	No more than 165 mg loss.
Cyclic Weathering	ASTM G 85 Annex A5 2,000 hours	No face blistering, no rusting, 3–6 mm scribe creepage.
Corrosion Resistance	ASTM B 117-94 Salt Spray (Fog) Test 2000 hours	No face blistering, no face rusting, 1–2 mm scribe creepage.
Adhesion – Crosshatch	ASTM D 3359 Cross Hatch	Not less than a rating of 4B average on 3 trials.
Adhesion – Elcometer	ASTM D 4541 Elcometer Pull Off Adhesion	Not less than 900 PSI, pull average on 3 trials.
Exterior Exposure	ASTM D 1014-83. Reapproved 1988. Exposed at south 45°.	Miami, FL, No face blistering, no face rusting, 0.8–1.6 mm scribe creepage, 12 months exposure. Orange City, IA, No face blistering, no face rusting and no scribe creepage, 17 months exposure.
Fresh Water Immersion	Coating system was applied to an abrasive blasted steel panel. Cured for 17 days and immersed in tap water at 70°F (21°C)	No blistering, cracking, rusting or delamination of film after 12 months exposure.
Pencil Hardness	ASTM D 3363-74	“B” pencil hardness
Heat Resistance	ASTM D 2485 High Temperature Service	Passes @ 250°F (121°C)
Impact Resistance	ASTM 2794	Direct 35 in./lbs., Reverse 5 in./lbs.

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Chemical Resistance for Splash and Spillage

The information included in this chart reflects Mult-E-Poxy 180's resistance to these chemicals in environments where the coating may periodically come in contact with such materials. Cleaning and general maintenance will prolong the integrity of all epoxy mastic coatings.

Chemical	Regular Cure	Fast Dry Cure	Chemical	Regular Cure	Fast Dry Cure
Solvents:			Salts and Bases:		
MEK	VG	VG	Sodium Hydroxide 10%	VG	E
Toluene	VG	VG	Sodium Hydroxide 50%	VG	E
Xylene	G	E	Ammonium Hydroxide 10%	E	E
Unleaded Gas	VG	E	Ammonium Hydroxide 50%	E	E
Denatured Alcohol	VG	VG	Nitrogen Fertilizer (Urea)	E	E
Methanol	E	E	Pot Ash	E	E
Mineral Spirits	E	E	Phosphate Fertilizer (Ammonium Phosphate)	E	E
Triethylamine	N/R	E	Nitrogen Fertilizer Solution (Ammonium Nitrate)	E	E
N-Butanol	N/R	VG	Acids:		
MIBK	G	E	Sulfuric Acid 5%	G	N/R
Isopropyl Alcohol	E	E	Sulfuric Acid 50%	G	N/R
Butyl Cellosolve	N/R	VG	HCL 5%	G	N/R
Perchlorethylene	VG	VG	HCL 10%	G	N/R
Ethylene Glycol	E	VG	Oleic	VG	VG
Oils:			Miscellaneous:		
Motor Oil	VG	E	Bleach	VG	VG
Brake Fluid	G	VG	Dowanol PM	N/R	VG
Aviation Hydraulic Fluid	VG	E	Water	E	E
			Hydrogen Peroxide 3%	E	E
			TSP 1%	E	E
			TSP 10%	E	E
			Windex w/AMD	VG	VG

Rating: E - Excellent, VG - Very Good, G - Good, N/R - Not Recommended

For more detailed information, contact your local Diamond Vogel sales representative.

Surface Preparation

All surfaces must be cured, clean, sound and free of all dirt, dust, efflorescence, wax, oil, grease, chalk and any other contamination that would interfere with new coating adhesion. Surface may be damp, but not wet. Bare surfaces must be properly prepared prior to application of this product.

Masonry Surfaces: (Poured Concrete, Concrete Block): New concrete must cure for a minimum of 30 days at 72°F (22°C) prior to coating application. Level all surface projections and mortar spatters by stoning. Rake mortar joints clean and remove all soluble salts.

Ferrous Metal Surfaces: Abrasive blast new steel to SSPC-SP-6, Commercial Blast Cleaning. Use proper abrasive to achieve an average of 1.5 to 2.0 mil profile. Blasted surfaces should be primed before flash rusting occurs. If blasting is not practical, remove loose rust and mill scale per SSPC-SP-2, Hand Tool Cleaning or SSPC-SP-3, Power Tool Cleaning. Treat rust free, cold rolled steel with a metal cleaning and etching solution. For immersion application, steel substrate should be abrasive blasted per SSPC-SP-10, Near White Blast Cleaning.

New Galvanized & Aluminum Surfaces: Remove surface contamination or passivators by scrubbing with a cleaning and etching solution or blast per SSPC-SP-7, Brush-Off Blast.

Weathered Galvanized & Aluminum Surfaces: Power or hand wash with detergent and rinse thoroughly. The surface must be dull and have a profile; use a cleaning and etching solution if needed.

Previously Painted Surfaces: Power or hand washing is recommended to remove contamination. If oil or grease is present, use of a cleaner/degreaser is required. All cleaning residue must be completely rinsed from the surface. Allow to dry. Remove all loose coatings, rust and corrosion by scraping, sanding or other abrading method as per SSPC-SP-2, Hand Tool Cleaning and SSPC-SP-3, Power Tool Cleaning or abrasive blast according to SSPC-SP-6, Commercial Blast Cleaning. Use sandpaper to dull slick, glossy and/or non-porous surfaces with sandpaper.

Mildew: Remove by using a solution of one-part household bleach and three parts water. Apply to mildewed area and scrub. Allow solution to remain on the surface for 3 to 5 minutes and then rinse completely and allow to dry before coating application.

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Part A (epoxy resin) and Part B (cure) have a 1:1 mixing ratio. Mix Part A and Part B separately using an explosion-proof power drill and blade type mixer. Add Part B to Part A and thoroughly mix and blend using an explosion-proof power drill and blade type mixer. Mix only the amount that can be used within the estimated pot life. For optimum application, air and surface temperature should be from 20° to 90°F (-6.7° to 32°C). Above 122°F (50°C), sagging may occur. Surface temperature must be at least 5°F (3°C) above the dew point.

Brush or Roller: Apply product in full even coats. Maintain a wet edge. To ensure adequate film build, two coats are recommended when applying by using a pure bristle brush or suitable roller (See Recoat/Topcoat for recoat period).

Airless Spray: Flush airless lines with Diamond Vogel N-3023 Xylo. Equipment must be clean prior to start. Thin only as needed for workability. Apply a wet coat in even, parallel passes with 50% overlap to avoid bare areas and pinholes. If required, crosshatch spray at right angles.

Tip Orifice	Atomizing Pressure	Material Hose ID	Manifold Filter
0.019" to 0.021"	2500–3000 PSI	1/4" or 3/8"	60 mesh

Packaging**Shipping Weight**

Product	2 Gallon Kit	5 Gallon Kit	Product	Cure	Weight
Part A Resin	1 Gallon (full filled)	5 Gallon (1/2 filled)	2 Gallon kit	Standard Cure	25.5 lbs. (11.6 kg)
Part B Std Cure	1 Gallon (full filled)	2.5 Gallon (full filled)	2 Gallon kit	Fast Dry Cure	25 lbs. (11.3 kg)
Part B Fast Dry Cure	1 Gallon (full filled)	2.5 Gallon (full filled)	5 Gallon kit	Standard Cure	62.5 lbs. (28.4 kg)
			5 Gallon kit	Fast Dry Cure	61 lbs. (27.7 kg)

Storage

Two years from date of manufacture when maintained in protected area and at temperatures of 40° to 100°F (4° to 38°C). Subject to inspection thereafter.

Safety Precautions

***WARNING!** If you scrape, sand, or remove old paint, you may release lead dust. LEAD IS TOXIC. EXPOSURE TO LEAD DUST CAN CAUSE SERIOUS ILLNESS, SUCH AS BRAIN DAMAGE, ESPECIALLY IN CHILDREN. PREGNANT WOMEN SHOULD ALSO AVOID EXPOSURE. Wear a NIOSH-approved respirator to control lead exposure. Clean up carefully with a HEPA vacuum and wet mop. Before you start, find out how to protect yourself and your family by contacting the National Lead Information Hotline at 1-800-424-LEAD or log on to www.epa.gov/lead.

Paint products contain chemical ingredients, which are considered hazardous. Prior to use, read container label warnings and the current Safety Data Sheet for important health and safety information. Ensure these instructions are practiced during product application and cure. **Keep out of the reach of children.**

This finish may become slippery when wet. The use of a non-slip additive is recommended when used on horizontal surfaces such as porches, patios, steps or any other floor areas which are exposed to moisture. **However**, Diamond Vogel makes no guarantees or claims that this will prevent accidents. Diamond Vogel's liability is limited to the purchase price of the product.

Safety Data

"Safety Data Sheets" are available from the Diamond Vogel website at www.diamondvogel.com. Prior to use of this product, obtain and review the Safety Data Sheet for health and safety information. Read and observe all precautionary notices on container labels. **NOT INTENDED FOR RESIDENTIAL USE.**

Limited Warranty

The technical data and suggestions for use contained in this document are true and correct to the best of our knowledge at the date of issuance. The statements of this document do not constitute a warranty, expressed or implied, as to the performance of these products. Since Diamond Vogel does not control the application of its products, or the condition of the surfaces to which they are applied, Diamond Vogel's liability will under no circumstances exceed replacement of the product. **All technical information is subject to change without notice.**

TECHNICAL DATA**Additional Information**

- Yellowing is a normal occurrence with epoxy products. The use of heaters that emit carbon dioxide and carbon monoxide during application may cause excessive yellowing to occur.
- Epoxyes will chalk and fade with extended exposure to sunlight.
- Cautions and Warnings information is located on the back panel of each product label.
- For current information regarding VOC regulations for specific geographical regions, please contact Technical Service at Diamond Vogel Corporate Headquarters, (Contact information is located at the bottom of the page).