



Heavy Duty Protective Coatings

LF-Series Mult-E-Poxy 180 Epoxy Mastic



Technical Data

PRODUCT DESCRIPTION

A versatile, self-priming, 2 component, high build epoxy, formulated for heavy duty industrial maintenance application on wide variety of substrates. Protects against abrasion, moisture, corrosive fumes and chemical contact. Mult-E-Poxy 180 is suitable for immersion service. Surface Tolerant over tightly adhering rust, damp surfaces, and most tightly adhered, existing coatings. Cures through a wide range of temperatures. V.O.C. compliant.

INTENDED USES

Designed for heavy duty commercial and industrial maintenance on properly prepared concrete block, poured concrete, structural steel, machinery and equipment, tank interiors and exteriors, non-potable fresh water immersion, pipes, shower and locker rooms, food preparation areas, operating rooms and laboratories. These are typical uses and are not intended to limit the use of this product. **Contact Diamond Vogel Technical Service for detailed information on floor coating and immersion applications.**

PHYSICAL PROPERTIES

Color	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.* Epoxies will chalk and fade with extended exposure to sunlight. 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.
Finish/Sheen	45 - 55 @ 60°
Bases (Part A)	White Base LF-1231, Deep Base LF-1233, Clear Base LF-0235
Cure (Part B)	Standard Cure LM-0216, FD Cure LM-0217
Resin Type	2 Component Epoxy
Reduction Solvents	Standard Cure - Diamond Vogel N-3023 Xylol FD Cure - Diamond Vogel N-4006 MEK
Clean-up Solvents	Diamond Vogel N-3023 Xylol
Solids By Weight	87.2 %
Solids by Volume	79 ± 2%
Theoretical Coverage**	1267 ft ² /gal @ 1 mil
Dry Film Thickness / Coat	5 - 8 mils (125-200 microns)
Wet Film to Achieve DFT	6 - 10 mils (150-250 microns)
Coverage at DFT**	158 - 253 ft ² /gal @ 5 - 8 mils DFT
VOC's	1.75 to 1.84 lbs./gal. (210 - 221 grams/liter) Activated
Induction Time	None
Mixing Ratio (by volume)	1 part resin to 1 part cure. Product packaged in pre-measured kits.
* Pot Life [At 70°F (21°C)]	Standard Cure is 2-3 hours FD Cure is ½ -1 hour

* Extreme temperatures can dramatically shorten Pot life.

** 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.

PHYSICAL PROPERTIES (continued)

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)
Multi-E-Poxy 180	3	4	10	20
Multi-E-Poxy 180FD	2	3	6	11
Dry Through (hours)**				
Multi-E-Poxy 180	4	9	28	80
Multi-E-Poxy 180FD	3	7	14	38

* **Dry 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 3 ½ days.**

Contact Diamond Vogel Technical Service for detailed information.

RECOAT/TOPCOAT

[At 70°F (21°C)]

Recoat Time*

Product	Minimum Recoat	Maximum Recoat
Multi-E-Poxy 180/Multi-E-Poxy 180	9½ hours	6 months
Multi-E-Poxy 180FD/Multi-E-Poxy 180FD	7 hours	6 months
Multi-E-Poxy 180/Pinnacle 330HS	9½ hours	2 months
Multi-E-Poxy 180FD/Pinnacle 330HS	8 hours	2 months
Multi-E-Poxy 180/V-Cote 200	11 hours	2 month
Multi-E-Poxy 180FD/V-Cote 200	9 hours	2 month
Multi-E-Poxy 180/V-Cote 222	11 hours	1 month
Multi-E-Poxy 180FD/V-Cote 222	9 hours	1 month

* **Recoat times vary with surface temperature, air movement, humidity and film thickness.**

RECOMMENDED TOPCOATS

Multi-E-Poxy 180 Epoxy Mastic
Pinnacle 330 HS Polyurethane
V-Cote 200 Acrylic Maintenance Primer/Finish (MC-Series)
V-Cote 222 Acrylic Maintenance Finish (MC-Series)

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. Use proper abrasive to achieve an average of 1.5 to 2 mil profile. Blasted surfaces should be primed before flash rusting occurs. If blasting is not practical, remove loose rust and mill scale with hand or power abrading tools as per SSPC-SP-2 and SSPC-SP-3. Treat rust free, cold rolled steel with a metal cleaning and etching solution. For immersion application, steel substrate should be abrasive blasted to SSPC-SP-10, near white blast.

New Galvanized & Aluminum Surfaces:

Remove surface contamination or passivators by scrubbing with a cleaning & 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 & 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 and SSPC-SP-3, or abrasive blast according to SSPC-SP-6 commercial blast. 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.

APPLICATION

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 jiffler mixer. Add part B to part A and thoroughly mix and blend using an explosion-proof power drill and jiffler mixer. Mix only the amount that can be used within the

estimated pot life. For optimum application, air and surface temperature should be from 50° to 90°F (10° 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 insure adequate film build, two coats are recommended when applying by brush or roller (See *Recoat/Topcoat* for recoat period).

Airless Spray: Flush airless lines with Diamond Vogel N-3023 Xylol. 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.

<i>Tip Orifice</i>	<i>Atomizing Pressure</i>	<i>Mat'l Hose ID</i>	<i>Manifold Filter</i>
0.019" to 0.021"	2500-3000 psi	1/4" or 3/8"	60 mesh

PERFORMANCE CRITERIA

Adhesion:

Mult-E-Poxy 180 will meet or exceed the following performance testing criteria.

Method: ASTM D 3359 Cross Hatch

Substrate: 6" x 12" hot rolled steel

Surface Preparation: Abrasive blasted to SSPC-SP-10

System: Mult-E-Poxy 180, one coat. Cured 17 months.

Requirement: Not less than a rating of 4B average on 3 trials.

Method: ASTM D 4541 Elcometer Pull Off Adhesion

Substrate: Blasted steel

Surface Preparation: Abrasive blasted to SSPC-SP-10

System: Mult-E-Poxy 180, one coat. Cured 17 months.

Requirement: Not less than 900 PSI, pull average on 3 trials.

Abrasion Resistance:

Method: ASTM D 4060 Taber Abrasion Test, CS-17 wheel 1000 gram load.

System: Mult-E-Poxy 180, one coat.

Requirement: No more than 165 mg. lost after 1000 cycles.

Corrosion Resistance:

Method: ASTM B 117-94 Salt Spray (Fog) Test

Substrate: 6" x 12" hot rolled steel

Surface Preparation: SSPC-SP-10 blast with 1.5 mil profile.

System: Mult-E-Poxy 180, one coat.

Requirement: 2000 hrs. - no face blistering, no face rusting, 1-2 mm scribe creepage.

Exterior Exposure:

Method: ASTM D 1014-83. Reapproved 1988. Exposed at south 45°.

Location: Miami, FL / Orange City, IA

System: Mult-E-Poxy 180, one coat.

Requirements: Miami, FL, No face blistering, no face rusting, .8-1.6 mm scribe creppage, 12 months exposure. Orange City, IA, No face blistering, no face rusting and no scribe creppage, 17 months exposure.

Fresh Water Immersion:

Method: Coating system was applied to an abrasive blasted steel panel. Cured for 17 days at 70°F (21°C) and immersed in tap water at 70°F (21°C).

System: Mult-E-Poxy 180, Two coats at Rec. DFT. Requirements: No blistering, cracking, rusting or delamination of film after 12 months exposure.

Cyclic/UV Exposure:

Method: ASTM G 85 Annex A5

Substrate: 6" x 12" hot rolled steel

Surface Preparation: SSPC-SP-10 blast with 1.5 mil profile

System: Mult-E-Poxy 180, one coat.

Requirements: 2000 hours with no face blistering, no rusting. 3-6 mm scribe creepage.

Pencil Hardness:

Method: ASTM D 3363-74

System: Mult-E-Poxy 180, one coat.

Requirements: H-2H pencil hardness.

Heat Resistance:

Method: ASTM D 2485 High Temperature Service

System: Mult-e-poxy 180 one coat

Requirements: Passes @ 250° F (121° C)

Impact Resistance:

Method: ASTM 2794

System: Mult-e-poxy 180 one coat

Result: Direct 35 in/lbs, Reverse 5 in/lbs

PACKAGING

	2 gallon kits	5 gallon kits
Part A Resin	1 Gallon (full filled)	5 Gallon can (1/2 filled)
Part B Standard Cure	1 Gallon (full filled)	2.5 Gallon can (full filled)
Part B Fast Dry Cure	1 Gallon (full filled)	2.5 Gallon can (full filled)

SHIPPING WEIGHT

2 gallon kits/ standard cure - 25 ½ lbs (11.6 kilos)
2 gallon kits/ fast cure - 25 lbs (11.3 kilos)
5 gallon kits/ standard cure - 62 ½ lbs (28.4 kilos)
5 gallon kits/ fast cure - 61 lbs (27.7 kilos)

STORAGE

Store in protected area maintained at 40 - 100°F (4 - 38°C).

SHELF LIFE

Two years from date of manufacture when maintained in protected storage. Subject to inspection thereafter.

SAFETY DATA

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

CAUTION

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.

CHEMICAL RESISTANCE**Chemical Resistance for Splash and Spillage**

The information included in this chart reflects Mult-E-Poxy 180's resistance to these chemical 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. For more detailed information, contact your local Diamond Vogel sales representative.

<u>Solvents:</u>	REG	FD	<u>Oils:</u>	REG	FD	<u>Miscellaneous:</u>	REG	FD
MEK	VG	VG	Dirty Motor Oil	VG	E	Bleach	VG	VG
Toluene	VG	VG	Brake Fluid	G	VG	Dowanol PM	P	VG
Xylene	G	E	Skydro	VG	E	Water	E	E
Unleaded Gas	VG	E				Hydrogen Peroxide 3%	E	E
Denatured Alcohol	VG	VG	<u>Salts and Bases:</u>			TSP 1%	E	E
Nethanol	E	E	Sodium Hydroxide 10%	VG	E	TSP 10%	E	E
Mineral Spirits	E	E	Sodium Hydroxide 50%	VG	E	Windex w/AM.D	VG	VG
Triethylamine	P	E	Ammonium Hydr. 10%	E	E	Nitrogen Fertilizer (urea)	E	E
N-Butanol	P	VG	Ammonium Hydr. 28%	E	E	Pot Ash	E	E
MIBK	G	E				Phosphate Fertilizer	E	E
Isopropyl Alcohol	E	E	<u>Acids:</u>			(Ammonium Phosphate)		
Butyl Cellosolve	P	VG	Sulfuric Acid 5%	G	P	Nitrogen Fertilizer	E	E
Perchlorethylene	VG	VG	Sulfuric Acid 50%	G	P	Solution (Ammonium Nitrate)		
Ethylene Glycol	E	VG	HCL 5%	G	P			
			HCL 10%	G	P			
			Oleic	VG	VG			

Excellent Resistance - Mult-E-Poxy 180 will withstand long term exposure to this condition. This product is recommended when cleanup and maintenance is impractical and irregular.

Good Resistance - Mult-E-Poxy 180 has above average performance to this condition. Spills must be removed within two to four days of contact. General maintenance and cleaning will prolong the life of this product.

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 Paints does not control the application of its products, or the condition of the surfaces to which they are applied, Diamond Vogel Paint's liability will under no circumstances exceed replacement of the product. **All technical information is subject to change without notice.**

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