



MORTARCLAD™ SERIES 218

PRODUCT PROFILE

GENERIC DESCRIPTION	Epoxy Modified Cementitious Mortar
COMMON USAGE	A high-performance, aggregate reinforced material for surfacing, patching and filling voids and bugholes in concrete substrates. Generally topcoated with a variety of high-performance epoxies and polyurethanes for use in mild to aggressive exposures.
COLORS	Greenish Gray

COATING SYSTEM

PRIMERS	Concrete: Self-priming CMU: Self-priming
TOPCOATS	Series 1, 20, 22, FC22, 30, 46H-413, 61, 66, L69, N69, 84, 104, 120, L140, N140, 151-1051, 161, 201, 205, 222, 223, 224, 237, 238, 239, 262, 270, 273, 280, 281, 282, 406, 434, 435, 436, 446. Note: Refer to the applicable topcoat data sheet for color availability and additional information.

SURFACE PREPARATION

CONCRETE	Prepare surfaces by method suitable for exposure and service. Refer to the appropriate topcoat product data sheet for specific surface preparation recommendations. Allow new cast-in-place concrete to cure a minimum of 28 days at 75°F (24°C). Verify concrete dryness in accordance with ASTM F 1869 "Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride" (moisture vapor transmission should not exceed three pounds per 1,000 square feet in a 24 hour period), F 2170 "Standard Test Method for Determining Relative Humidity in Concrete using in situ Probes" (relative humidity should not exceed 80%), or D 4263 "Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method" (no moisture present). Prepare concrete surfaces in accordance with NACE No. 6/SSPC-SP13 Joint Surface Preparation Standards and ICRI Technical Guidelines. Abrasive blast, shot-blast, water jet or mechanically abrade concrete surfaces to remove laitance, curing compounds, hardeners, sealers and other contaminants and to provide a minimum ICRI-CSP 5 surface profile. Large cracks, voids and other surface imperfections should be filled with a recommended filler or surfacer.
CMU	Allow mortar to cure for 28 days. Level protrusions and mortar spatter.
PAINTED SURFACES	Not recommended.
ALL SURFACES	Must be clean, dry and free of oil, grease and other contaminants.

TECHNICAL DATA

VOLUME SOLIDS	100% (mixed)											
RECOMMENDED DFT	Parge Coat: 1/16"-1/4" per lift; maximum 1/2" thickness Feather-edge Capable: 1/32"											
CURING TIME	<table><tr><th>Temperature</th><th>To Touch</th><th>To Recoat with Itself</th><th>To Topcoat</th></tr><tr><td>75°F (24°C) & 50% R.H.</td><td>3-4 hours</td><td>unlimited †</td><td>15 hours minimum</td></tr></table>				Temperature	To Touch	To Recoat with Itself	To Topcoat	75°F (24°C) & 50% R.H.	3-4 hours	unlimited †	15 hours minimum
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75°F (24°C) & 50% R.H.	3-4 hours	unlimited †	15 hours minimum									
	† Note: When the first application is equal to or greater than 1/4", or the second application is equal to or greater than 1/4", then the maximum recoat window with itself is 2 hours.											
VOLATILE ORGANIC COMPOUNDS	Unthinned: 0.15 lbs/gallon (19 grams/litre)											
NUMBER OF COMPONENTS	Three—Liquid: Part A and Part B Powder: Part C											
PACKAGING	KIT CONSIST OF:											
		PART A (Liquid)	PART B (Liquid)	PART C (Cement-Sand)	When Mixed							
	Large Kit	1 gal plastic jug	1 qt can	42.75 lb bag	2.8 gallons (10.6 L)							
NET WEIGHT	Large Kit: 51.53 lbs (23.37 kg)											
STORAGE TEMPERATURE	Minimum 40°F (4°C) Maximum 110°F (43°C) For optimum handling and application characteristics, all material components should be stored or conditioned between 70°F to 90°F (21°C to 32°C) 48 hours prior to use. Protect Parts A & B from freezing; discard if frozen. Protect Part C from moisture; store in dry environment off ground.											
TEMPERATURE RESISTANCE	(Dry) Continuous 170°F (77°C) Intermittent 200°F (93°C)											
SHELF LIFE	12 months at recommended storage temperature.											
FLASH POINT - SETA	N/A											
HEALTH & SAFETY	This product contains chemical ingredients which are considered hazardous. Read container label warning and Material Safety Data Sheet for important health and safety information prior to the use of this product. Keep out of the reach of children.											

MORTARCLAD™ | SERIES 218

APPLICATION

COVERAGE RATES

Thickness	Large Kit
1/16" (1.6 mm)	72 sq ft (6.7 m ²) theoretical
1/8" (3.1 mm)	36 sq ft (3.3 m ²) theoretical
1/4" (6.4 mm)	18 sq ft (1.7 m ²) theoretical

Allow for application losses due to surface irregularities and substrate porosity.

MIXING

Pour liquid Part B into new empty bucket. Any remaining Part B shall be removed by adding 3-5 ounces of liquid Part A, re-sealing lid and shaking quart can for 5-10 seconds; pour contents into bucket. Add remaining liquid Part A into bucket and blend for 30 seconds. Under agitation, slowly sift Part C powder into the mixed liquids taking care not to deposit entire contents of Part C at once. Mix for two minutes or until the cement-sand is thoroughly wetted and a smooth consistency is achieved. **Important: Do not add additional Part C.**

Note: For repair of large bugholes, honeycomb and other cavities deeper than the recommended maximum thickness, 20-25 lbs of multi-purpose clean sand (conforming to ASTM C 33) or 15-18 lbs of locally purchased pea gravel (coarse aggregate) can be post added to create "dry-pack" mortar. One half inch to No. 8 size (12.5 mm to 2.36 mm) pea gravel conforming to ASTM C 33 is recommended. Contact your Tnemec representative or Tnemec Technical Services for additional information.

THINNING

Normally not required. For low-pressure spray application to transfer the Series 218, may thin up to 6 oz. for large kit. Use only potable water.

POT LIFE

1 hour at 75°F (24°C).

Caution: Thinning with high temperature water will significantly reduce the pot life. For best results, water temperature should not exceed 80°F (27°C).

SUBSTRATE CONDITIONING

The concrete substrate surface should be "pre-wet" or dampened with potable water to a Saturated Surface Dry (SSD) condition; the concrete is darkened by water but there is no pooling of water on the concrete. This can be done by using a Hudson pump-up sprayer or heavy nap roller cover dampened with potable water. **Note:** Do not over saturate the surface.

APPLICATION EQUIPMENT

Mortar Hawk, steel, stiff concrete finishing trowels, broad knives and rubber floats are recommended. For troweling inside and outside corners, the use of a radius or margin trowel is recommended.

Material can be transferred to the surface by utilizing hydraulic spray equipment (i.e. WIWA 410 9:1 or 600 12:1 pump) followed by troweling to seal the material. No special ACI 308 curing requirements - ambient cure only.

For a smoother finished appearance, trowel licks may be reduced by using a 1/4" nap roller cover lightly dampened with water over the sealed Series 218 material. **Note:** If white liquid is brought to the surface during this process, the Series 218 material is being overworked and/or oversaturated. Overworking or oversaturating the surface may have an adverse effect on the adhesion of subsequent coatings applied. Let Series 218 cure and remove surface deposit using concrete rub brick.

SURFACE TEMPERATURE

Minimum of 45°F (7°C), optimum 65°F to 80°F (18°C to 27°C), maximum of 90°F (32°C). The substrate temperature should be at least 5°F (3°C) above the dew point.

MATERIAL TEMPERATURE

For optimum application, handling and performance, the material temperature during application should be between 70°F and 90°F (21°C and 32°C). Temperature will affect the workability. Cool temperatures increase viscosity and decrease workability. Warm temperatures will decrease viscosity and shorten pot life.

CLEANUP

Flush and clean all equipment immediately after use with warm water.

WARRANTY & LIMITATION OF SELLER'S LIABILITY: Tnemec Company, Inc. warrants only that its coatings represented herein meet the formulation standards of Tnemec Company, Inc. THE WARRANTY DESCRIBED IN THE ABOVE PARAGRAPH SHALL BE IN LIEU OF ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. The buyer's sole and exclusive remedy against Tnemec Company, Inc. shall be for replacement of the product in the event a defective condition of the product should be found to exist and the exclusive remedy shall not have failed its essential purpose as long as Tnemec is willing to provide comparable replacement product to the buyer. NO OTHER REMEDY (INCLUDING, BUT NOT LIMITED TO, INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR LOST PROFITS, LOST SALES, INJURY TO PERSON OR PROPERTY, ENVIRONMENTAL INJURIES OR ANY OTHER INCIDENTAL OR CONSEQUENTIAL LOSS) SHALL BE AVAILABLE TO THE BUYER. Technical and application information herein is provided for the purpose of establishing a general profile of the coating and proper coating application procedures. Test performance results were obtained in a controlled environment and Tnemec Company makes no claim that these tests or any other tests, accurately represent all environments. As application, environmental and design factors can vary significantly, due care should be exercised in the selection and use of the coating.

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PRODUCT PROFILE

GENERIC DESCRIPTION	Modified Aliphatic Amine Epoxy Mortar
COMMON USAGE	This aggregate reinforced, 100% solids, hybrid epoxy mortar is designed for wastewater immersion/fume environments where hydrogen sulfide gas and sulfuric acid are present.
COLORS	5022 Beige

COATING SYSTEM

PRIMERS	Concrete: Self-priming or Series 201
SURFACER/FILLER/PATCHER	63-1500, 218, 219
TOPCOATS	Series 435

SURFACE PREPARATION

STEEL	SSPC-SP5/NACE 1 White Metal Blast Cleaning with a 4.0 mil minimum anchor profile.
CONCRETE	Allow new concrete to cure 28 days. Verify dryness by testing for moisture with a "plastic film tape-down test" (Reference ASTM D 4263). If necessary for testing horizontal surfaces, perform "Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride" (Reference ASTM F 1869). Moisture content not to exceed three pounds per 1,000 sq ft in a 24 hour period. Shot-blast or mechanically abrade to remove laitance, form release agents, curing compounds, sealers and other contaminants and to provide surface profile (Reference SSPC-SP13/NACE 6, ICRI CSP5 or greater). Large voids, bugholes and other cavities should be filled with recommended filler or surfacer.
CMU	Allow mortar to cure for 28 days. Level protrusions and mortar spatter.
ALL SURFACES	Must be clean, dry and free of oil, grease and other contaminants.

TECHNICAL DATA

VOLUME SOLIDS	100% (mixed)															
RECOMMENDED DFT	1/8 inch or 125 mils (3,125 microns) minimum.															
CURING TIME	<table><tr><th>Temperature</th><th>To Topcoat</th><th>Place in Service</th><th>Maximum Recoat</th></tr><tr><td>75°F (24°C)</td><td>8 hours</td><td>2 days</td><td>7 days</td></tr><tr><td>55°F (13°C)</td><td>12 hours</td><td>3 days</td><td>7 days</td></tr></table>	Temperature	To Topcoat	Place in Service	Maximum Recoat	75°F (24°C)	8 hours	2 days	7 days	55°F (13°C)	12 hours	3 days	7 days			
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75°F (24°C)	8 hours	2 days	7 days													
55°F (13°C)	12 hours	3 days	7 days													
VOLATILE ORGANIC COMPOUNDS	Curing time will vary with surface temperature, air movement, humidity and film thickness. 0.79 lbs/gallon (95 grams/litre)															
HAPS	0.06 lbs/gal solids															
THEORETICAL COVERAGE	1,604 mil sq ft/gal (39.4 m²/L at 25 microns). See APPLICATION for coverage rates.															
NUMBER OF COMPONENTS	Three: Part A, Part B and Part C															
PACKAGING	<table><tr><th></th><th>PART A (Partially Filled)</th><th>PART B (Partially Filled)</th><th>PART C Aggregate</th><th>WHEN MIXED</th></tr><tr><td>Small Kit</td><td>1 gallon can</td><td>1 gallon pail</td><td>One bag with premeasured aggregate</td><td>2.5 gallons (9.5 L)</td></tr><tr><td>Large Kit</td><td>6 gallon can</td><td>3 gallon can</td><td>One bag with premeasured aggregate</td><td>5.0 gallons (18.9 L)</td></tr></table>		PART A (Partially Filled)	PART B (Partially Filled)	PART C Aggregate	WHEN MIXED	Small Kit	1 gallon can	1 gallon pail	One bag with premeasured aggregate	2.5 gallons (9.5 L)	Large Kit	6 gallon can	3 gallon can	One bag with premeasured aggregate	5.0 gallons (18.9 L)
	PART A (Partially Filled)	PART B (Partially Filled)	PART C Aggregate	WHEN MIXED												
Small Kit	1 gallon can	1 gallon pail	One bag with premeasured aggregate	2.5 gallons (9.5 L)												
Large Kit	6 gallon can	3 gallon can	One bag with premeasured aggregate	5.0 gallons (18.9 L)												
NET WEIGHT PER GALLON	15.46 ± 0.25 lbs (7.01 ± .11 kg) (mixed)															
STORAGE TEMPERATURE	Minimum 40°F (4°C) Maximum 110°F (43°C) For optimum application properties, material temperature should be between 70°F (21°C) and 80°F (27°C) prior to application.															
SHELF LIFE	12 months at recommended storage temperature.															
FLASH POINT - SETA	Part A: 170°F (77°C) Part B: 170°F (77°C)															
HEALTH & SAFETY	Paint products contain chemical ingredients which are considered hazardous. Read container label warning and Material Safety Data Sheet for important health and safety information prior to the use of this product. Keep out of the reach of children.															

PERMA-SHIELD H₂S™ | SERIES 434

APPLICATION

COVERAGE RATES

GUIDE:

	Large Kit (5.035 Gal) (Approx.)	Small Kit (2.5 Gal) (Approx.)
At 1/8" (3.2 mm)	64 sq ft (6.0 m ²)	32 sq ft (3.0 m ²)

MIXING

Application of coating below minimum recommended dry film thickness may adversely affect coating performance.

Mix the entire contents of Part A and Part B separately. Add the contents of the can marked Part B to Part A and blend both components, using a minimum 10 amp, 3/4 inch heavy duty drill with an "H" paddle drywall mixing blade (i.e., M713 mixing paddle) for one minute. Gradually add all the Part C aggregate to the liquid mix while under agitation and blend for another one to two minutes or until a uniform consistency is achieved. During the mixing process, scrape the sides and bottom of the container to ensure all of Parts A, B and C are blended together. **Mix the entire kit as supplied.**

THINNING

Do not thin.

WORKING TIME

30 minutes at 77°F (25°C)

APPLICATION EQUIPMENT

Spray Application: Use air powered immersion tube 11:1 Grover grout pump #397-042 or 9:1 WIWA 410 pump. Spray application must be followed by troweling (see below). **Note:** For detailed instructions, refer to the Series 434 Surface Preparation & Application Guide.

Trowel: Mortar Hawk, steel concrete finishing trowels are required to spread the Series 434 to an even, minimum 1/8" thickness. For detailed instruction, refer to the Series 434 Surface Preparation & Application Guide.

Finish Roll: Use a high quality 1/4" nap, shed resistant, woven fabric roller, lightly dampened with No. 2 Thinner or No. 42 Thinner to backroll and finish trowel and spray/trowel applications.

SURFACE TEMPERATURE

Minimum of 50°F (10°C) Maximum of 130°F (54°C).

The surface should be dry and at least 5°F (3°C) above the dew point.

HOLIDAY TESTING

If required by project specifications, high voltage discontinuity (spark) testing shall be performed using a Tinker & Rasor AP/W High Voltage Holiday Tester, set at the voltage recommended in the Series 434 Surface Preparation and Application Guide.

CLEANUP

Flush and clean all equipment immediately after use with MEK or Tnemec's No. 4 Thinner. For spray applications, equipment must be flushed after every three to five kits of mixed material.

WARRANTY & LIMITATION OF SELLER'S LIABILITY: Tnemec Company, Inc. warrants only that its coatings represented herein meet the formulation standards of Tnemec Company, Inc. THE WARRANTY DESCRIBED IN THE ABOVE PARAGRAPH SHALL BE IN LIEU OF ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. The buyer's sole and exclusive remedy against Tnemec Company, Inc. shall be for replacement of the product in the event a defective condition of the product should be found to exist and the exclusive remedy shall not have failed its essential purpose as long as Tnemec is willing to provide comparable replacement product to the buyer. NO OTHER REMEDY (INCLUDING, BUT NOT LIMITED TO, INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR LOST PROFITS, LOST SALES, INJURY TO PERSON OR PROPERTY, ENVIRONMENTAL INJURIES OR ANY OTHER INCIDENTAL OR CONSEQUENTIAL LOSS) SHALL BE AVAILABLE TO THE BUYER. Technical and application information herein is provided for the purpose of establishing a general profile of the coating and proper coating application procedures. Test performance results were obtained in a controlled environment and Tnemec Company makes no claim that these tests or any other tests, accurately represent all environments. As application, environmental and design factors can vary significantly, due care should be exercised in the selection and use of the coating.

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