



# H.S. EPOXY SERIES 104

## PRODUCT PROFILE

<b>GENERIC DESCRIPTION</b>	Cycloaliphatic Amine Epoxy
<b>COMMON USAGE</b>	Versatile coating applies up to 10 mils per coat on steel or concrete. Protects in immersion, salt spray and chemical exposures. Superior abrasion- and stain-resistance.
<b>COLORS</b>	Primer: 1211 Red. Topcoat: Refer to Tnemec Color Guide. <b>Note:</b> Epoxies chalk with extended exposure to sunlight. Lack of ventilation, incomplete mixing, miscatalyzation or the use of heaters that emit carbon dioxide and carbon monoxide during application and initial stages of curing may cause yellowing to occur.
<b>FINISH</b>	Semi-gloss. Gloss can vary with texture, porosity of substrate and thickness of film.
<b>SPECIAL QUALIFICATIONS</b>	Conforms to the performance requirements of AWWA C 210 (not for potable water contact).
<b>PERFORMANCE CRITERIA</b>	Extensive test data available. Contact your Tnemec representative for specific test results.

## COATING SYSTEM

<b>PRIMERS</b>	<b>Steel:</b> Self-priming or Series 66, L69, L69F, N69, N69F, V69, V69F, 90E-92, 90-97, 90G-1K97, 161 <b>Concrete:</b> Self-priming or Series 215, 218. <b>CMU:</b> Self-priming or Series 130, 215, 218
<b>TOPCOATS</b>	Series 66, L69, L69F, N69, N69F, V69, V69F, 73, 104, 1074, 1074U, 1075, 1075U Refer to COLORS on applicable topcoat data sheets for additional information. <b>Note:</b> When topcoating with Endura-Shield polyurethane finish, exterior exposed Series 104 has the following maximum time to recoat: Series 73, 1074, 1074U, 1075 or 1075U, 60 days. If this time is exceeded, an epoxy intermediate coat or scarification is required before topcoating. Refer to appropriate topcoat data sheet for additional information.

## SURFACE PREPARATION

<b>STEEL</b>	<b>Immersion Service:</b> SSPC-SP10/NACE 2 Near White Blast Cleaning with a minimum angular anchor profile of 2.0 mils <b>Non-Immersion Service:</b> SSPC-SP6/NACE 3 Commercial Blast Cleaning with a minimum angular anchor profile of 2.0 mils
<b>CONCRETE</b>	Allow new concrete to cure for 28 days. Abrasive blast referencing SSPC-SP13/NACE 6, ICRI-CSP3-5 Surface Preparation of Concrete and Tnemec's Surface Preparation and Application Guide.
<b>CMU</b>	Allow mortar to cure for 28 days. Level protrusions and mortar spatter.
<b>PRIMED SURFACES</b>	<b>Immersion Service:</b> Scarify the surface before topcoating if the Series 66, L69, L69F, N69, N69F, V69, V69F, 104 or 161 prime coat has been exterior exposed for 14 days or longer.
<b>ALL SURFACES</b>	Must be clean, dry and free of oil, grease, chalk and other contaminants.

## TECHNICAL DATA

<b>VOLUME SOLIDS</b>	82.0 ± 2.0% (mixed) †
<b>RECOMMENDED DFT</b>	4.0 to 10.0 mils (100 to 255 microns) per coat. <b>Note:</b> Number of coats and thickness requirements will vary with substrate, application method and exposure. Contact your Tnemec representative.

**CURING TIME**

Temperature	To Handle	To Recoat	Immersion
75°F (24°C)	6 hours at 4.0 mils (100 microns) DFT 10 hours at 10.0 mils (255 microns) DFT	16-18 hours	7 days

Curing time varies with surface temperature, air movement, humidity and film thickness.

**VOLATILE ORGANIC COMPOUNDS**

EPA Method 24 †  
**Unthinned:** 0.80 lbs/gallon (96 grams/litre)  
**Thinned 10% (No. 2 Thinner):** 1.92 lbs/gallon (230 grams/litre)  
**Thinned 10% (No. 49 Thinner):** 0.80 lbs/gallon (96 grams/litre)

**HAPS**

**Unthinned:** 1.60 lbs/gal solids  
**Thinned 10% (No. 2 Thinner):** 2.50 lbs/gal solids  
**Thinned 10% (No. 49 Thinner):** 1.60 lbs/gal solids

**THEORETICAL COVERAGE**

1,315 mil sq ft/gal (32.3 m<sup>2</sup>/L at 25 microns). See APPLICATION for coverage rates. †

**NUMBER OF COMPONENTS**

Two: Part A (amine) and Part B (epoxy)

**PACKAGING**

5 gallon (18.9L) pails and 1 gallon (3.79L) cans — Order in multiples of 2.

**NET WEIGHT PER GALLON**

14.70 ± 0.25 lbs (6.67 ± .11 kg) (mixed) †

**STORAGE TEMPERATURE**

Minimum 20°F (-7°C) Maximum 120°F (49°C)  
 For optimum application properties, material temperature must be above 60°F (16°C) prior to application.

**TEMPERATURE RESISTANCE**

(Dry) Continuous 250°F (121°C) Intermittent 275°F (135°C)

**SHELF LIFE**

Part A: 24 months; Part B: 12 months at recommended storage temperature.

**FLASH POINT - SETA**

Part A & Part B: 81°F (27°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.**

# H.S. EPOXY | SERIES 104

## APPLICATION

### COVERAGE RATES

	Dry MILS (Microns)	Wet MILS (Microns)	Sq Ft/Gal (m <sup>2</sup> /Gal)
Minimum	4.0 (100)	5.0 (125)	329 (30.5)
Maximum	10.0 (255)	12.0 (305)	131 (12.2)

Allow for overspray and surface irregularities. Film thickness is rounded to the nearest 0.5 mil or 5 microns. Application of coating below minimum or above maximum recommended dry film thicknesses may adversely affect coating performance. †

### MIXING

Power mix contents of each container, making sure no pigment remains on the bottom. Pour a measured amount of Part B into a clean container large enough to hold both components. Add an equal volume of Part A to Part B while under agitation. Continue agitation until the two components are thoroughly mixed. Do not use mixed material beyond pot life limits. **Note:** Both components must be above 60°F (16°C) prior to mixing. Mixing ratio is one to one by volume. A large volume of material will set up quickly if not applied or reduced in volume.

**Caution: Do not reseal mixed material. An explosion hazard may be created.**

### THINNING

Use No. 2 Thinner. For air spray, airless spray or roller, thin up to 10% or 3/4 pint (380 mL) per gallon. Thin up to 10% or 3/4 pint (380 mL) per gallon with No. 49 Thinner when required by air pollution regulations.

### POT LIFE

2 1/2 hours at 60°F (16°C)    2 hours at 77°F (25°C)    1 hour at 100°F (38°C)

### APPLICATION EQUIPMENT

#### Air Spray

Gun	Fluid Tip	Air Cap	Air Hose ID	Mat'l Hose ID	Atomizing Pressure	Pot Pressure
DeVilbiss JGA	E	765 or 704	5/16" or 3/8" (7.9 or 9.5 mm)	3/8" or 1/2" (9.5 or 12.7 mm)	60-90 psi (4.2-6.2 bar)	10-20 psi (0.7-1.4 bar)

Low temperatures or longer hoses require higher pot pressure.

#### Airless Spray

Tip Orifice	Atomizing Pressure	Mat'l Hose ID	Manifold Filter
0.015"-0.021" (380-535 microns)	3000-3800 psi (207-262 bar)	1/4" or 3/8" (6.4 or 9.5 mm)	60 mesh (250 microns)

Use appropriate tip/atomizing pressure for equipment, applicator technique and weather conditions.

**Note:** Application over inorganic zinc-rich primers: Apply a wet mist coat and allow tiny bubbles to form. When bubbles disappear in 1 to 2 minutes, apply a full wet coat at specified mil thickness.

**Roller:** Roller application optional when environmental restrictions do not allow spraying. Use 3/8" or 1/2" (9.5 mm to 12.7 mm) synthetic woven nap covers. **Note:** Two or more coats may be required to obtain recommended film thicknesses.

**Brush:** Recommended for small areas only. Use high quality natural or synthetic bristle brushes. **Note:** Two or more coats may be required to obtain recommended film thicknesses.

### SURFACE TEMPERATURE

Minimum 60°F (16°C)    Maximum 135°F (57°C)

The surface should be dry and at least 5°F (3°C) above the dew point. Coating will not cure below minimum surface temperature.

### CLEANUP

Flush and clean all equipment immediately after use with the recommended thinner or xylol.

† Values may vary with color.

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.



PRODUCT PROFILE

**GENERIC DESCRIPTION** Modified Polyamine Epoxy

**COMMON USAGE** High-solids moisture tolerant epoxy used for priming concrete, wood and drywall. Also as a stand-alone one-coat clear floor sealer.

**COLORS** Clear. **Note:** Epoxies chalk with extended exposure to sunlight. Lack of ventilation, incomplete mixing, miscatalyzation or the use of heaters that emit carbon dioxide and carbon monoxide during application and initial stages of curing may cause yellowing to occur.

COATING SYSTEM

**SURFACER/FILLER/PATCHER** Series 63-1500, 130, 218, 219  
**Note:** A repair kit of 201, with Part C fumed silica, is available for small patching/surfacing repairs. For more extensive repairs and additional information, contact your Tnemec representative or Tnemec Technical Services.

**TOPCOATS** Series 201, 206, 210, 222, 223, 224, 237, 238, 239, 270, 273, 275, 280, 281, 282, 434, 435, 436.  
**Note:** Refer to the applicable topcoat data sheet for color availability and additional information.

SURFACE PREPARATION

Prepare surfaces by method suitable for exposure and service.

**HORIZONTAL CONCRETE** Allow new concrete to cure 28 days. Verify dryness by testing for moisture with a "plastic film tapedown test" (Reference ASTM D 4263). Should moisture be detected, 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, curing compounds, hardeners, sealers and other contaminants and to provide surface profile (Reference SSPC-SP13, ICRI CSP 3 thru 9). Large voids and other cavities should be filled with recommended filler or surfacer.

**VERTICAL CONCRETE** Allow new concrete to cure 28 days. Abrasive blast or mechanically abrade concrete to remove laitance, form release agents, curing compounds, hardeners, sealers and other contaminants and to provide surface profile (Reference SSPC-SP13).

**CMU** Allow new mortar to cure 28 days. Surfaces must be clean, dry, sound and free of all contaminants. Level all protrusions and mortar spatter.

**DRYWALL** Sand joint compound smooth and feather edge.

**WOOD** Sand rough areas. Seal knots and pitch pockets. Fill cracks and nail holes before primer is topcoated.

**PAINTED SURFACES** Contact your Tnemec representative.

**ALL SURFACES** Must be clean, relatively dry and free of oil, grease, curing compounds/sealers, hardeners and other contaminants. Application will tolerate residual dampness from surface preparation process but not puddled water, glistening concrete or inherently wet concrete.

TECHNICAL DATA

**VOLUME SOLIDS** 100% (mixed)

**RECOMMENDED DFT** **Concrete:** **Horizontal:** 6.0 to 12.0 mils (150 to 305 microns) per coat. **Vertical** - 4.0 to 6.0 mils (100 to 150 microns) per coat.  
**Drywall & Wood:** 4.0 to 6.0 mils (100 to 150 microns) per coat—two coats applied at 30 to 45 minute intervals.

CURING TIME

Temperature	Maximum Recoat Time	To Place in Service
75°F (24°C)	24 hours	24 hours

Curing time varies with surface temperature, air movement, humidity and film thickness.  
**Ventilation:** When used as a tank lining or in enclosed areas, provide adequate ventilation during application and cure. Reference ventilation guidelines contained in the latest edition of AWWA D 102. **Note:** If Series 201 is used as the primer for a mortar system, the mortar application should take place while the Series 201 is still tacky, typically up to four hours, otherwise, aggregate should be lightly broadcast into the primer so to provide tooth to hold the mortar in place when spread. When the Series 201 is used as a vertical or horizontal primer for a thin film system, the 201 should be allowed to dry hard without exceeding the 24 hour recoat window. If Series 201 is used as the primer for the Series 270 or 275 Stranlok system, the Series 201 should be allowed to tack up for approximately one to four hours depending upon temperature but not allowed to dry hard.

VOLITILE ORGANIC COMPOUNDS

**Unthinned:** 0.24 lbs/gallon (28 grams/litre)  
**Thinned 5% (No. 2 Thinner):** 0.57 lbs/gallon (68 grams/litre)  
**Thinned 5% (No. 42 Thinner):** 0.55 lbs/gallon (65 grams/litre)

HAPS

**Unthinned:** 0.0 lbs/gal solids  
**Thinned 5% (No. 2 Thinner):** 0.37 lbs/gal solids  
**Thinned 5% (No. 42 Thinner):** 0.0 lbs/gal solids

THEORETICAL COVERAGE

1,604 mil sq ft/gal (39.4 m<sup>2</sup>/L at 25 micons). See APPLICATION for coverage rates.

NUMBER OF COMPONENTS

Two: Part A and Part B (2 Parts A to 1 Part B by volume)

PACKAGING

	PART A	PART B	Yield (mixed)
Extra Large Kit	2-55 gallon drums	1-55 gallon drum	165 gallons
Large Kit	2-5 gallon pails	1-5 gallon pail	15 gallons
Small Kit	2-1 gallon cans	1-1 gallon can	3 gallons

# EPOXOPRIME® | SERIES 201

<b>NET WEIGHT PER GALLON</b>	9.50 ± 0.25 lbs (4.31 ± .11 kg) (mixed)
<b>STORAGE TEMPERATURE</b>	Minimum 40°F (4°C) Maximum 90°F (32°C) <b>Note:</b> Material should be stored at temperatures between 70°F and 90°F (21°C and 32°C) for at least 48 hours prior to use.
<b>TEMPERATURE RESISTANCE</b>	(Dry) Continuous 250°F (121°C) Intermittent 275°F (135°C)
<b>SHelf LIFE</b>	12 months at recommended storage temperature.
<b>FLASH POINT - SETA</b>	N/A
<b>HEALTH &amp; SAFETY</b>	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. <b>Keep out of the reach of children.</b>

## APPLICATION

**COVERAGE RATES** Before commencing, obtain and thoroughly read the StrataShield Installation and Application Guide for floors.

	Dry MILS (Microns)	Wet MILS (Microns)	Sq Ft/Gal (m <sup>2</sup> /Gal)
Horizontal	6.0-12.0 (150-305)	6.0-12.0 (150-305)	134-267 (12.2-24.8)
Vertical	4.0-6.0 (100-150)	4.0-6.0 (100-150)	267-401 (24.8-37.3)

Allow for overspray and surface irregularities and waste. Film thickness is rounded to the nearest 0.5 mil or 5 microns. Application of coating below minimum or above maximum recommended dry film thicknesses may adversely affect coating performance.

**MIXING** Use a variable speed drill with a PS Jiffy blade. Slowly mix 2 parts A component, and while under agitation add 1 part B component and mix for a minimum of two minutes. Ensure that all Part B is blended with Part A by scraping the pail walls with a flexible spatula.  
**Note:** A large volume of material will set up quickly if not applied or reduced in volume.  
**Caution: Do not reseal mixed material. An explosion hazard may be created.**

**THINNING** Normally not required. May thin up to 5% or 1/4 pint (190 mL) to improve application properties. Brush and roll applications use No. 2 Thinner. Spray applications use No. 42 Thinner.

**POT LIFE** 25 to 30 minutes at 75°F (24°C)  
Material temperatures above 90°F (32°C) will significantly reduce the pot life.

**APPLICATION EQUIPMENT** Brush, roller, squeegee and airless spray.  
**Roller:** Use high quality 3/8" to 1/2" woven nap, shed resistant, roller cover.  
**Brush:** Use high quality synthetic or nylon bristle brush.  
**Horizontal:** Squeegee and backroll. Brush small areas only.  
**Vertical:** Roll, spray and backroll or airless spray based on substrate conditions. Brush small areas only.  
Spray application equipment includes a Graco "King" 45:1 or 56:1 airless spray pump or other airless spray equipment of equal or greater configuration and capability. Pump assembly should include a moisture trap and oiler, air regulator with gauge and fluid outlet drain valve. When spraying these nonfibered coatings, a high pressure manifold and 60 mesh filter is recommended. Use a 3/8" to 1/2" I.D. material hose (4,000-5,000 psi working pressure rating). A Graco silver gun or equivalent may be used. The preferred tips with orifices ranging from .019" to .033" should be mounted in a Graco H.D. RAC Housing/Guard assembly. The suggested operating air pressure is 80 to 90 psi. **Spraying should be considered as a means to transfer the material to the surface and should be followed by backrolling.**

**SURFACE TEMPERATURE** Minimum of 55°F (13°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 xylene or MEK.

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.

Tnemec Company Incorporated 6800 Corporate Drive Kansas City, Missouri 64120-1372 1-800-TNEMEC1 Fax: 1-816-483-3969 www.tnemec.com



# SURFACING EPOXY SERIES 215

## PRODUCT PROFILE

**GENERIC DESCRIPTION** Modified Polyamine Epoxy

**COMMON USAGE** An advanced generation, 100% solids epoxy filler and surfacer for concrete or steel. Excellent 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** 1200 White, 1212 Gray

**FINISH** Semi-Gloss

**SPECIAL QUALIFICATIONS** Certified by **NSF International** in accordance with **NSF/ANSI Std. 61**. Ambient air cured Series 215 is qualified for use on the interior of potable water storage tanks and reservoirs of 200 gallons (757 L) capacity or greater at 80 mils DFT or 95 mils DFT with fiberglass mat (Fiberglass Mat Product No. S211-0215). Return to immersion time is seven days. Contact your Tnemec representative for approved systems and additional information on potential uses.

## COATING SYSTEM

**SURFACER/FILLER/PATCHER** Self-patching or Series 217, 218

**PRIMERS** **Steel:** Self-priming, Series 1, 20, FC20, 22, 27WB, 66, L69, L69F, N69, N69F, V69, V69F, 90-97, H90-97, 90G-1K97, 91-H<sub>2</sub>O, H91-H<sub>2</sub>O, 94-H<sub>2</sub>O, L140, L140F, N140, N140F, V140, V140F, 161, 201, 394  
**Concrete:** Self-priming, Series 20, FC20, 22, 27WB, 66, L69, L69F, N69, N69F, V69, V69F, L140, L140F, N140, N140F, V140, V140F, 161, 201. **Note:** Primers may be necessary on some applications to minimize or eliminate the potential for outgassing. **Note:** For potable water mat lay-up system, use fiberglass mat product number S211-0215.  
**CMU & Cement Board:** Self-priming. Can also be used as a bedding coat for Series 273 Stranlok ML system, use fiberglass mat product number S273-0273C.

**TOPCOATS** Series 20, FC20, 22, FC22, 27WB, 61, 66, L69, L69F, N69, N69F, V69, V69F, 84, 104, 113, 114, 120, L140, L140F, N140, N140F, V140, V140F, 141, 161, 201, 210, 262, 264, 270, 273, 280, 281, 282, 287, 406, 431, 434, 435, 436, 446.  
**Note:** Maximum recoat time for Series 406 is 72 hours.

## SURFACE PREPARATION

**STEEL** **Non-Immersion Service:** SSPC-SP6/NACE 3 Commercial Blast Cleaning with a minimum 3.0 mil angular anchor profile. **Immersion Service:** SSPC-SP10/NACE 2 Near-White Blast Cleaning with a minimum 3.0 mil angular anchor profile.

**CONCRETE** Allow new cast-in-place concrete to cure a minimum of 28 days at 75°F (24°C). Verify concrete dryness and prepare concrete surfaces in accordance with NACE 6/SSPC-SP13 Joint Surface Preparation Standards and ICRI Technical Guidelines. Moisture vapor transmission should not exceed three lbs per 1,000 sq ft in a 24 hour period (reference ASTM F 1869 "Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride"). Relative humidity should not exceed 80% (reference ASTM F 2170 "Standard Test Method for Determining Relative Humidity in Concrete using in situ Probes"). 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 14 days. Level protrusions and mortar spatter.

**ALL SURFACES** Must be clean, dry and free of oil, grease, chalk and other contaminants.

## TECHNICAL DATA

**VOLUME SOLIDS** 100% (mixed) †

**RECOMMENDED DFT** **Resurfacer:** 1/32" to 1/8" (0.8 mm to 3.2 mm)  
 Up to 2" with the addition of Series 211 (see Mixing instructions) for filling honeycombs, blow holes and surface imperfections found in formed concrete surfaces. Larger imperfections may require multiple applications. Bedding coat for mat lay up is typically in the 1/16" range.

### CURING TIME

Temperature	To Touch	Dry Through	Maximum to Recoat ‡
95°F (35°C)	4 hours	12 hours	14 days
75°F (24°C)	10 hours	24 hours	21 days
55°F (13°C)	18 hours	48 hours	21 days
45°F (7°C)	24 hours	72 hours	21 days
35°F (2°C)	32 hours	96 hours	21 days

‡ **Note:** If the Series 215 surface is exterior exposed for more than seven days, scarification is required before topcoating. **Note:** Use "To Touch" cure information for minimum recoat times if succeeding topcoats are spray-applied and "Dry Through" if succeeding topcoats are applied by roller, brush, or trowel.

### VOLATILE ORGANIC COMPOUNDS

**Unthinned:** 0.08 lbs/gal solids (10 grams/litre) †

### HAPS

**Unthinned:** 0.0 lbs/gal solids

### THEORETICAL COVERAGE

1,604 mil sq ft/gal (39.4 m<sup>2</sup>/L at 25 microns). See APPLICATION for coverage rates. †

### NUMBER OF COMPONENTS

Two: Part A and Part B (1 Part A to 1 Part B by volume)

### PACKAGING

	PART A	PART B	When Mixed
Large Kit	3 gal. pail (partial fill)	5 gal. pail (partial fill)	4 gallons (15L)
Small Kit	1 gallon can	3 gal. pail (partial fill)	2 gallons (7.5L)
Touch-Up Kit	1 quart can	1 quart can	1/2 gallon (1.89L)

# SURFACING EPOXY | SERIES 215

<b>NET WEIGHT PER GALLON</b>	13.28 ± 0.25 lbs (6.02 ± .11 kg) (mixed) †
<b>STORAGE TEMPERATURE</b>	Minimum 20°F (-6°C) Maximum 110°F (43°C) Prior to application, the material temperature should be between 70°F and 80°F (21°C and 27°C). It is suggested the material be stored at these temperatures at least 48 hours prior to use.
<b>TEMPERATURE RESISTANCE</b>	(Dry) Continuous 250°F (121°C) Intermittent 275°F (135°C)
<b>SHelf LIFE</b>	12 months at recommended storage temperature.
<b>FLASH POINT - SETA</b>	Part A and Part B: N/A
<b>HEALTH &amp; SAFETY</b>	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. <b>Keep out of the reach of children.</b>

## APPLICATION

### COVERAGE RATES

Thickness	Large Kit	Small Kit
1/32" (31 mils)	207 sq ft (19.2 m <sup>2</sup> )	103 sq ft (9.6 m <sup>2</sup> )
1/16" (62 mils)	103 sq ft (9.6 m <sup>2</sup> )	52 sq ft (4.8 m <sup>2</sup> )
1/8" (125 mils)	51 sq ft (4.8 m <sup>2</sup> )	26 sq ft (2.4 m <sup>2</sup> )
1/2" (500 mils)	13 sq ft (1.2 m <sup>2</sup> )	6 sq ft (0.6 m <sup>2</sup> )

### MIXING

Mix the entire contents of Part A and Part B separately. Scrape all of the Part A material from the pail and into the Part B container by using a flexible spatula. Use a variable speed drill with a PS Jiffy blade and mix the blended components for a minimum of two minutes. Apply the mixed material within the pot life limits after agitation. **Note:** Tnemec Series 211-0211 fumed silica may be added at 0.75:1 by volume per mixed gallon where a thicker consistency is required to achieve the desired application and film build properties. Mix with Part A as directed in Mixing Instructions. Multiple lifts may be required. A large volume of material will gel quickly if not applied or reduced in volume.  
**Caution: Do not reseat mixed material. An explosion hazard may be created.**

### THINNING

Normally not required.

### POT LIFE

45 minutes at 70°F (21°C) 25 minutes at 90°F (32°C)  
Material temperatures above 90°F (32°C) will significantly reduce the pot life.

### APPLICATION EQUIPMENT

Mortar hawk, trowels, broad knives and rubber floats are recommended. Series 215 can also be spray transferred using spray texture gun equipment.

#### Airless Spray

Pump	Fluid Line	Spray Gun	Fluid Tips	Fluid Pressure	Atomizing Pressure	Hopper
WIWA 410 9:1 Ratio	25' 1" Diameter 10' 3/4" Diameter	WIWA Pole Gun	1/4" to 3/8"	180 to 360 psi (Adjust as necessary)	Adjust at gun for proper atomization	6.5 Gallons Stainless Steel
Graco 45:1, 56:1, X50, X60	3/8" to 1/2" I.D.	XTR-7	.031"-.041"	3500-4500 psi	N/A	6.5 Gallons Stainless Steel

Cart mounted 9:1 ratio, air operated pump with air filter, regulator and lubricator, air control manifold, fluid outlet drain with drain valve and control air hose assembly. Refer to the operation manual for application instructions. Air requirements 80 CFM at 100 psi. **Atomization air must be dry, the use of an after cooler is recommended.**

### SURFACE TEMPERATURE

Minimum 35°F (2°C), maximum 130°F (54°C). The surface temperature should be at least 5°F (3°C) above the dew point. Coating will not cure below minimum surface temperature. To minimize outgassing, concrete temperature should be stabilized or in a descending temperature mode and the concrete primed with a suitable epoxy primer.

### MATERIAL TEMPERATURE

Prior to application, the material temperature should be between 70°F and 80°F (21°C and 27°C). It is suggested the material be stored at these temperatures at least 48 hours prior to use. 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 xylene, MEK, or when required by SCAQMD regulations, No. 74 Thinner.

† Values may vary with color.

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.



# MORTARCRETE® SERIES 217

## PRODUCT PROFILE

**GENERIC DESCRIPTION** Cementitious Repair Mortar

**COMMON USAGE** A single-component, rapid setting, non-shrinking hydraulic cementitious resurfacer used to restore deteriorated concrete surfaces.

**COLORS** Gray

**SPECIAL QUALIFICATIONS** Series 217 is acceptable for use on the interior of potable water concrete storage tanks and reservoirs when topcoated with an NSF/ANSI Std. 61 certified protective coating. Contact your Tnemec representative for approved systems and additional information.

## COATING SYSTEM

**PRIMERS** Concrete: Series 217 Bond Coat †  
† A thin bond coat (scrub coat) is required. Refer to the Series 217 MortarCrete *Surface Preparation and Application Guide* or Contact Tnemec Technical Services with questions.

**TOPCOATS** Series 22, FC22, 46H-413, L69, L69F, N69, N69F, V69, V69F, 120, L140, L140F, N140, N140F, V140, V140F, 201, 215, 218, 237SC, 239SC, 434, 435, 436, 446  
**Note:** Series 217 must be mechanically prepared in accordance with SSPC-SP13/NACE 6, ICRI-CSP4-5 surface profile prior to application of recommended topcoats. Shrinkage cracks in the Series 217 may require filling with Series 215 or Series 218 to prevent transfer or telegraphing of any cracks. Contact Tnemec Technical Services for additional information.

## SURFACE PREPARATION

**REINFORCING STEEL** The repair of deteriorated concrete resulting from reinforcing steel corrosion should be in accordance with ICRI Technical Guideline No. 310.1R. Concrete reinforcing steel (rebar) can be primed with Tnemec Series 1 or 69.

**CONCRETE** Remove all loose materials, deteriorated concrete, laitance, existing coatings, and other bond-inhibiting materials from the surface in accordance with SSPC-SP13/NACE 6, minimum surface profile of ICRI-CSP6.

**EDGE CONDITIONING** The edges of the patch should be sawcut perpendicular to the surface to a depth of at least 1/4 inch (6 mm). Break out the complete repair area to a minimum depth of 1/4 inch (6 mm) up to the sawed edge to prevent feather edging. Avoid cutting the reinforcing steel.

**ALL SURFACES** Must be clean and free of oil, grease and other contaminants. Always take precautions to prohibit the surface from becoming contaminated prior to product application.

## TECHNICAL DATA

**RECOMMENDED DFT** **Horizontal/Vertical:** 1/4 inch (6 mm) to 4 inches (102 mm)  
**Overhead:** 1/4 inch (6 mm) to 2 inches (51 mm)

**CURING TIME**

Temperature	Initial Set	Final Set	To Topcoat
70°F (21°C)	60 minutes	90 minutes	12 hours

**Note:** Use Series 211-217 Slow Set additive to extend set times. Refer to Series 211-217 Slow Set product data sheet for information.

**VOLATILE ORGANIC COMPOUNDS**

0.0 lbs/gallon (0 grams/litre)

**NUMBER OF COMPONENTS**

One: 2.4 gallons/0.3 cu ft (9.0 L) (dry volume) approximately

**MIXING RATIO**

Add 3 to 5 quarts (2.8 to 4.7 L) potable water per 55 lb (23 kg) plant-proportioned, pre-blended unit. Do not mix partial units.

**PACKAGING**

5 gallon bucket

**NET WEIGHT**

55 lbs (23 kg)

**STORAGE TEMPERATURE**

Condition product to 65°F-75°F (18°C-24°C) 24 hours before using. Protect from moisture; store in dry environment off the ground in unopened containers.

**SHELF LIFE**

12 months in original, unopened packaging at recommended storage conditions.

**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.**

# MORTARCRETE® | SERIES 217

## APPLICATION

### SPREADING RATE

Prior to application, review the Series 217 MortarCrete *Surface Preparation and Application Guide*.  
Approximate theoretical spread rate based upon 4 quarts (3.8 L) of water to yield 3.4 gal/0.45 cu ft (12.9 L) unit.

<b>Thickness</b>	0.25 in. (.635 cm)	0.50 in. (1.27 cm)	0.75 in. (1.91 cm)	1.00 in. (2.54 cm)	1.25 in. (3.18 cm)	1.50 in. (3.81 cm)	1.75 in. (4.45 cm)	2.00 in. (5.08 cm)
<b>Coverage</b>	21.6 (2.01 m <sup>2</sup> )	10.8 (1.00 m <sup>2</sup> )	7.2 (.67 m <sup>2</sup> )	5.4 (.50 m <sup>2</sup> )	4.32 (.40 m <sup>2</sup> )	3.6 (.33 m <sup>2</sup> )	3.0 (.28 m <sup>2</sup> )	2.7 (.25 m <sup>2</sup> )

<b>Thickness</b>	2.25 in. (5.72 cm)	2.50 in. (6.35 cm)	2.75 in. (6.99 cm)	3.00 in. (7.62 cm)	3.25 in. (8.26 cm)	3.50 in. (8.89 cm)	3.75 in. (9.53 cm)	4.00 in. (10.16 cm)
<b>Coverage</b>	2.4 (.22 m <sup>2</sup> )	2.2 (.20 m <sup>2</sup> )	2.0 (.19 m <sup>2</sup> )	1.8 (.17 m <sup>2</sup> )	1.7 (.16 m <sup>2</sup> )	1.5 (.14 m <sup>2</sup> )	1.4 (.13 m <sup>2</sup> )	1.3 (.12 m <sup>2</sup> )

**Note:** Application below minimum or above maximum spreading rates may adversely affect product performance.

### WORKING TIME

Approximately 20-30 minutes at 75°F (24°C), & 50% R.H. Placement time is dependent on environmental conditions and mixing water/set control amounts. Do not retemper the mortar with additional water. **Note:** Do not wait for bleed water. Finish surface as soon as material condition allows.

### MIXING

Remove Series 217 from the 5-gallon plastic pail. Add 3-5 quarts (2.8 to 4.7 L) of potable water to a clean bucket. **Note:** Elevated water temperature can significantly reduce working time.  
**Optional:** Dependent upon the ambient temperature and desired consistency, add up to 3 packets of Series 211-217 Slow Set additive into the mixing water (refer to the Series 211-217 product data sheet). Under mechanical agitation with a slow-speed drill (400-600 rpm) and H-Style (box blade) mixing paddle, slowly sift powder into mixing bucket. Mix 1-4 minutes until fully blended. Avoid extended over-mixing.

### APPLICATION

**Substrate:** Concrete substrate shall be "pre-wet" or dampened with potable water to a Saturated Surface Dry (SSD) condition prior to Series 217 application; the concrete substrate is darkened by water but there is no pooling of water on the concrete.  
**Bond Coat:** Using a masons brush or rubber sponge, work a thin bond coat (scrub coat) of Series 217 into the SSD substrate to ensure intimate contact and to help prevent sloughing or sagging of repair materials on vertical and overhead surfaces.  
**Mortar:** Apply the Series 217 with adequate pressure before the scrub coat dries. Thoroughly consolidate the repair material into the corners of patch and around any exposed reinforcement steel in the repair zone. Full encapsulation of the reinforcement and intimate contact with substrate is important for long-term durability.  
**Finishing:** Do not wait for bleed water. Finish Series 217 by striking off with a straight edge and close with the recommended concrete finishing tools, as conditions allow, to create a smooth, even surface.

### CURING

External curing is required in accordance with ACI recommendations. Contact Tnemec Technical Services for additional information.

### APPLICATION EQUIPMENT

Hand troweling can be accomplished using steel concrete finishing trowels, broad knives, rubber floats, wooden floats or plastic floats. Material may be spray transferred using low-pressure grout pumps or high-pressure wet-mix shotcrete equipment. Contact Tnemec Technical Services for additional information.

### TEMPERATURE REQUIREMENT

Minimum substrate and ambient application temperature 40°F (4°C) and rising. Do not apply if expected to fall below this temperature within 24 hours of application.

### CLEANUP

Uncured material can be removed with water. Cured material can only be removed mechanically.

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.

