



City of Pittsburg, KS
Parks and Recreation Department

Request for Proposals

**BRUSH BLASTING, PRIMING AND PAINTING
MAIN POOL, WADING POOL, LAZY RIVER AND SURGE TANK
PITTSBURG AQUATIC CENTER**

Proposal Due Date:
Tuesday, November 30, 2021, at 2 PM

Request for Proposals
Brush Blasting, Priming and Painting
Main pool, Wading Pool, Lazy River and Surge Tank
Pittsburg Aquatic Center

General Information

The City of Pittsburg, Kansas is seeking quotes for the Brush Blasting, Priming and Painting of the Main Pool, Wading Pool, Lazy River and Surge Tank at the Pittsburg Aquatic Center located at 908 West 9th Street. Work to include blasting to bare concrete, remediating compromised areas and recoating of the main pool, wading pool and lazy river; and, removing, remediating and recoating surge tank located in the pool pump house.

Project Summary:

The awarded Contractor will do all work necessary to remove, remediate and recoat all areas as defined by the bid specifications that are attached to, and become a part of, this Request for Proposals. All work will comply with provided specifications. The City or designated agent will inspect all work at each phase or regularly scheduled intervals of the project before allowing Contractor to proceed. All work will be required to be completed (curing time included) by May 1, 2022, to allow for filling of the pool.

Proposals shall include, but are not limited to the following:

- Price
- Use
- Terms

ADD ALTERNATE OPTIONS:

#1 - Available annual inspection / service / maintenance plans from installer.

#2 - Available extended warranty plan.

Attachments:

1. Specifications - Coating Systems for Rehabilitation of Main Swimming Pool, Wading Pool, Lazy River and Surge Tank
2. Racing Lane Detail
3. Lazy River Detail
4. Wading Pool Detail
5. Product Data Sheet – Hi-Build Epoxoline II Series N69
6. Product Data Sheet – Chembuild Series 135
7. Product Data Sheet – Tneme-Fascure Series 161
8. Product Data Sheet – Surfacing Epoxy Series 215
9. Product Data Sheet – Mortarcrete Series 217

Pre-Proposal Walk Thru:

A pre-proposal walk thru is scheduled for 10:00 am, Thursday, November 18, 2021, at the Pittsburg Aquatic Center, 908 West 9th Street, Pittsburg, KS.

Procedure

Tentative Project Schedule

A tentative timeline is set forth below. This timeline is subject to change by the City, at the City's sole discretion, as events and conditions warrant.

• Proposal Release Date	November 9, 2021
• Pre-Proposal Walk-Thru	November 18, 2021, 10 AM
• Proposals Due	November 30, 2021 2 PM
• Formal Acceptance/Award by City Commission	December 14, 2021
• All Work to be Completed by:	May 1, 2022

Method of Submission

Proposals shall be submitted by mail or by hand to the following address. Envelopes used in submitting Proposals must be clearly marked, **"PROPOSAL: AQUATIC CENTER BRUSH BLASTING AND PAINTING PROJECT"**:

Tammy Nagel, City Clerk
City of Pittsburg, Kansas
P.O. Box 688
Pittsburg, Kansas 66762

The deadline for submission is **Tuesday, November 30, 2021, by 2 p.m., Central Standard Time**. There will not be a public opening of Proposals.

Questions and Answers

All questions regarding this RFP should be directed to:

Toby Book
Parks Superintendent / Interim Director of Parks and Recreation
Tobias.Book@pittks.org

Please place Aquatic Center Brush Blasting and Painting Project in the SUBJECT of all emails and/or written correspondence. All emailed dialog regarding the project are subject for discussion at the pre-proposal walk-thru.

General Terms and Conditions

Contract: The successful firm will be required to enter into a written contract with the City.

Performance Bond: Required – Executed with Contract

Statutory Bond: Required – Executed with Contract

General Terms and Conditions – Cont.

Insurance:

The City of Pittsburgh has certain insurance requirements that must be met. The FIRM will be responsible to purchase and maintain at its sole expense the following insurance coverage:

- Professional liability insurance covering negligent acts, errors or omissions of FIRM, its agents, officers, and employees. Total aggregate policies of insurance shall be in an amount of not less than One Million Dollars and 00/100 Cents (\$1,000,000.00).
- A comprehensive general liability policy of insurance shall be purchased and maintained that lists the City as an additional insured. Such policy of insurance shall be in an amount of not less than One Million Dollars and 00/100 Cents (\$1,000,000.00).
- A Workmen's Compensation and Employer's Liability Policy shall be procured and maintained. This policy shall include an "all states" endorsement. Said insurance policy shall also cover claims for injury, disease or death of employees which, for any reason does not fall within the provisions of the Workmen's Compensation Law. Liability Limits shall not be less than:
 - Workmen's Compensation – Statutory
 - Employer's Liability - \$500,000.00 Each Occurrence.
- FIRM shall furnish the City copies of all insurance policies or certificates of insurance relating to the insurance policies that must be maintained hereunder.

In addition, insurance policies applicable hereto shall contain a provision that the City shall be given thirty (30) days written notice by the insurance company before each policy is substantially changed or cancelled.

SECTION 09 96 00 — COATING SYSTEMS FOR REHABILITATION OF MAIN SWIMMING POOL, WADING POOL, LAZY RIVER & SURGE TANK

PART 1 - GENERAL

1.1 SUMMARY

- A. This section includes coating systems for rehabilitation of the existing main swimming pool, wading pool, lazy river and surge tank.
- B. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 REFERENCES

- A. This Section contains references to the governing standards and documents listed below. They are a part of this Section as specified and modified; the current version shall apply unless otherwise noted. In case of conflict between the requirements of this section and those of the listed documents, the more stringent of the requirements shall prevail.
- B. ASTM International (ASTM):
 - 1. ASTM D 16 - Terminology Relating to Paint, Varnish, Lacquer, and Related Products.
- C. NACE International (NACE):
 - 1. NACE 6 - Surface Preparation of Concrete.
- D. SSPC: The Society of Protective Coatings (SSPC):
 - 1. SSPC-SP 1 - Solvent Cleaning
 - 2. SSPC-SP 11 - Power Tool Cleaning to Bare Metal
 - 3. SSPC-SP 13 - Surface Preparation of Concrete
- E. International Concrete Repair Institute (ICRI):
 - 1. International Concrete Repair Institute (ICRI) Guideline No. 03732 - Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays.
- F. Related Sections:
 - 1. Section 02760 - Paving Specialties: Pavement marking paints.
 - 2. Section 05080 - Factory-Applied Metal Coatings.
 - 3. Section 15075 - Mechanical Identification: Identification of mechanical equipment.
 - 4. Section 16075 - Electrical Identification: Identification of electrical equipment.
- G. Unless otherwise specified, references to documents shall mean the documents in effect at the time of receipt of Bids. If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents, the last version of the document before it was discontinued.

1.3 DEFINITIONS

- A. Definitions of Painting Terms: ASTM D 16, unless otherwise specified.

- B. Dry Film Thickness (DFT): Thickness of a coat of paint in fully cured state measured in mils (1/1000 inch).

1.4 SUBMITTALS

- A. Submit under provisions of Division 1, Section 01 33 00 Submittal Procedures.
- B. Submit for approval prior to commencing any work:
 - 1. Manufacturers data sheets on each product to be used, including:
 - a. Preparation instructions and recommendations.
 - b. Storage and handling requirements and recommendations.
 - c. Installation methods.
 - d. Operation and maintenance data.
 - e. Submit manufacturer's Safety Data Sheets (SDS) and other safety requirements.
- C. Shop Drawings:
 - 1. Submit a complete list of products proposed for use, including identifying product names and catalog numbers.
 - a. Arrange in same format as Schedule of Finishes.
 - b. Include applicable manufacturer's data and recommendations.
- D. Selection Samples: For each finish product specified, provide two complete sets of color chips representing manufacturer's full range of available colors.
- E. Verification Samples: For each finish product specified, provide two samples, minimum size 3 x 4 inch square, representing actual product, color and patterns.
- F. Manufacturer's Certificates: Provide a letter certifying products specified meet or exceed specified requirements.

1.5 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Provide products from a company specializing in manufacture of high-performance epoxy coatings with a minimum of ten (10) years' experience.
 - 1. Materials shall be products of a single manufacturer or items standard with manufacture of specified coating materials.
 - 2. Submit manufacturer's certification that coatings comply with specified requirements and are suitable for intended application.
- B. Applicator's Qualifications: Engage a single installer approved by the manufacturer with a minimum of three (3) years' experience in the application of protective coatings with documented skill and successful experience in the installation.
 - 1. Submit name and qualifications to Owner.
 - 2. Submit proof of acceptability of applicator by manufacturer to Owner.
 - 3. Submit proof of five (5) projects of similar capacity.
- C. Single-Source Responsibility:
 - 1. Materials shall be products of a single manufacturer or items standard with manufacturer of specified coating materials.

2. Provide secondary materials which are produced or are specifically recommended by coating system manufacturer to ensure compatibility of system.
- D. Regulatory Requirements: Conform to applicable codes and ordinances for flame, fuel, smoke and volatile organic compounds (VOC) ratings requirements for finishes at time of application.
- E. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
1. Prepare a ten (10) foot by ten (10) foot (3.05m by 3.05m) mock-up for each coating system specified using same materials, tools, equipment, and procedures intended for actual surface preparation and application. Mock up for slip resistant areas will need to conform to specifications according to Model Aquatic Health Code section 4.2.1.8 referring to the requirements of ANSI A137.1-2012.
 2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Owner.
 3. Refinish mock-up area as required to produce acceptable work.
 4. Retain mock-ups to establish intended standards by which coating systems will be judged.
- F. Pre-Installation Meeting:
1. Schedule a conference and inspection to be held on-site before field application of coating systems begins.
 2. Conference shall be attended by Contractor, Owner's representative, coating applicators, and a representative of coating material manufacturer.
 3. Topics to be discussed at meeting shall include:
 - a. A review of Contract Documents and accepted shop drawings shall be made and deviations or differences shall be resolved.
 - b. Review items such as environmental conditions, surface conditions, surface preparation, application procedures, and protection following application. A surface mock-up of the surface preparation requirements for the project, both interior and exterior, shall be prepared by the Contractor. All parties shall agree to the degree of cleanliness and the mock-up shall be preserved for the duration of the project.
 - c. Establish which areas on-site will be available for use as storage areas and working area.
 4. Pre-construction conference and inspection shall serve to clarify Contract Documents, application requirements and what work should be completed before coating application can begin.
 5. Prepare and submit, to parties in attendance, a written report of pre-installation conference. Report shall be submitted within 3 days following conference.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: All coatings shall be properly prepared by the manufacturer and delivered to the site for field painting in the original, unbroken containers with manufacturer's label plainly printed thereon clearly identifying:
1. Coating or material name.
 2. Manufacturer.
 3. Color name and number.
 4. Batch or lot number.

5. Date of manufacture.
 6. Mixing and thinning instructions.
- B. Storage:
1. Store materials in a clean, dry area and within temperature range in accordance with manufacturer's instructions.
 2. Keep containers sealed until ready for use.
 3. Flammable coatings must be stored to conform to City, County, State and Federal safety codes for flammable coatings or paint materials.
 4. At all times, coatings shall be protected from freezing.
 5. Do not use materials beyond manufacturer's shelf life limits.
- C. Handling: Protect materials during handling and application to prevent damage or contamination.
- D. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.7 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
- B. Weather:
1. Air and surface temperatures: Prepare surfaces and apply and cure coatings within air and surface temperature range in accordance with manufacturer's instructions.
 2. Surface Temperature: Minimum of 5 degrees F (3 degrees C) above the dew point.
 3. Relative Humidity: Prepare surfaces and apply and cure coatings within relative humidity range in accordance with manufacturer's instructions.
 4. Precipitation: Do not prepare surfaces or apply coatings in rain, snow, fog, or mist.
 5. Wind: Do not spray coatings if wind velocity is above manufacturer's recommended limit.
- C. Ventilation: Provide ventilation during coating evaporation stage in confined or enclosed areas in accordance with manufacturer's instructions.
- D. Dust and Contaminants:
1. Schedule coating work to avoid excessive dust and airborne contaminants.
 2. Protect work areas from excessive dust and airborne contaminants during coating application and curing.

1.8 WARRANTY

- A. Manufacturer's Warranty: Coating manufacturer shall warranty its products as free from material defects for a minimum period of one (1) year, from date of conditional acceptance. Provide associated warranty certificate.
- B. Applicator's Warranty: Applicator shall warranty the installed protective lining system as free from material and workmanship defects for a minimum period of one (1) year. Provide associated warranty certificate.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Products specified are manufactured by Tnemec Company, Inc., Kansas City, MO and are specified as a standard of quality.

2.2 MATERIALS

- A. Compatibility: Provide field primers and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

2.3 COATING SYSTEMS FOR SWIMMING POOLS

- A. Floor & Walls - Main Swimming Pool, Wading Pool & Lazy River:
 - 1. System Type: Modified Polyamine Resurfacing Epoxy / Polyamide Epoxy / Polyamide Epoxy / Polyamide Epoxy
 - 2. Surface Preparation: Full abrasive blast in accordance with SSPC-SP13 to remove all existing coatings and contaminants and provide a minimum surface profile of CSP-3. Degrease and pressure wash the substrate to ensure a clean surface prior to coating.
 - 3. Deep Patching: Series 217 Mortarcrete shall be used as required to repair damaged areas of substrate ranging from 1/4" to 4" deep.
 - 4. Resurfacer: Series 215 Surfacing Epoxy, applied at 1/32" to 1/8" as required to resurface entire pool to create a sound, paintable surface free of voids and surface imperfections.
 - 5. Prime Coat: Series 161 Tneme-Fascure , applied at 200 square feet per gallon.
 - a. Prime Coat Color: P002 - Tank White
 - 6. Intermediate Coat: Series 161 Tneme-Fascure , applied at 200 square feet per gallon.
 - a. Intermediate Coat Color: P002 - Tank White
 - 7. Finish Coat: Series 161 Tneme-Fascure, applied at 200 square feet per gallon.
 - a. Finish Coat Color: P002 - Tank White
 - 8. Lane Markers & Targets: Two coats of Series 161 Tneme-Fascure, applied at 200 square feet per gallon. Color to be selected by the City.
 - 9. System Note:
 - a. Provide non-skid surface on ramps, submerged steps, and pool floors 30 inches deep and shallower. Mix dry 50 mesh white silica sand in final coat at a rate of 5 pounds per gallon of paint used.
- B. Surge Tank (Previously Coated Steel):
 - 1. System Type: Polyamidoamine Epoxy/Polyamidoamine Epoxy
 - 2. Surface Preparation: SSPC/SP11 Power Tool Cleaning to Bare Metal - The removal of all visible oil, grease, dirt, mill scale, rust, paint, oxide, corrosion products, and other foreign matter. *Test patch recommended to confirm adhesion.*
 - 3. Spot Prime: Series 135 Chembuild, applied at 250 square feet per gallon to all bare steel.
 - 4. Full Prime Coat: Series N69 Hi-Build Epoxoline II, applied at 200 square feet per gallon.
 - a. Prime Coat Color: Selected by City

5. Finish Coat: Series N69 Hi-Build Epoxoline II, applied at 200 square feet per gallon.
 - a. Finish Coat Color: Selected by City

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions under which coating systems are to be applied.
- B. Notify Owner of areas or conditions not acceptable.
- C. Do not begin surface preparation or application until unacceptable areas or conditions have been corrected.
- D. Do not begin installation until substrates have been properly prepared.

3.2 PREPARATION

- A. Protection of areas not scheduled to be coated:
 1. Protect surrounding areas and surfaces not scheduled to be coated from damage during surface preparation and application of coatings.
 2. Immediately remove coatings that fall on surrounding areas and surfaces not scheduled to be coated.
- B. Surface Preparation: Full Abrasive Blast or Power Tool Cleaning to Bare Metal as noted.

3.3 APPLICATION

- A. Apply coatings in accordance with manufacturer's instructions.
- B. Mix and thin coatings, including multi-component materials, in accordance with manufacturer's instructions.
- C. Keep containers closed when not in use to avoid contamination.
- D. Do not use mixed coatings beyond pot life limits.
- E. Use application equipment, tools, pressure settings, and techniques in accordance with manufacturer's instructions.
- F. Uniformly apply coatings at spreading rate required to achieve specified DFT.
- G. Apply coatings to be free of film characteristics or defects that would adversely affect performance or appearance of coating systems.
- H. Stripe paint with brush critical locations on steel, such as welds, corners, and edges using specified primer.

3.4 REPAIR

- A. Materials and Surfaces Not Scheduled to be Coated: Repair or replace damaged materials and surfaces not scheduled to be coated.
- B. Damaged Coatings: Touch-up or repair of damaged coatings. Touch-up of minor damage shall be acceptable where result is not visibly different from adjacent surfaces. Recoat entire surface where touch-up result is visibly different, either in sheen, texture, or color.
- C. Coating Defects: Repair in accordance with manufacturer's instructions coatings that exhibit film characteristics or defects that would adversely affect performance or appearance of coating systems.

3.5 FIELD QUALITY CONTROL

- A. Inspector's Services:
 - 1. Verify coatings and other materials are as specified.
 - 2. Verify surface preparation and application is as specified.
 - 3. Verify DFT of each coat and total DFT of each coating system specified using wet film and dry film gauges.
 - 4. Coating Defects: Check coatings for film characteristics or defects that would adversely affect performance or appearance of coating systems.
 - 5. Report:
 - a. Submit written reports describing inspections made and actions taken to correct non-conforming work.
 - b. Report non-conforming work not corrected.
 - c. Submit copies of report to Owner and Contractor.
- B. Manufacturer's Technical Services: Coordinate with coating manufacturer's technical service department or independent sales representative for current technical data and instructions.
- C. One-Year Inspection:
 - 1. Owner will set date for one-year inspection of coating systems.
 - 2. Inspection shall be attended by Owner, Contractor, and manufacturer's representative.
 - 3. Repair deficiencies in coating systems as determined by Owner in accordance with manufacturer's instructions.

3.6 CLEANING

- A. Remove temporary coverings and protection of surrounding areas and surfaces.

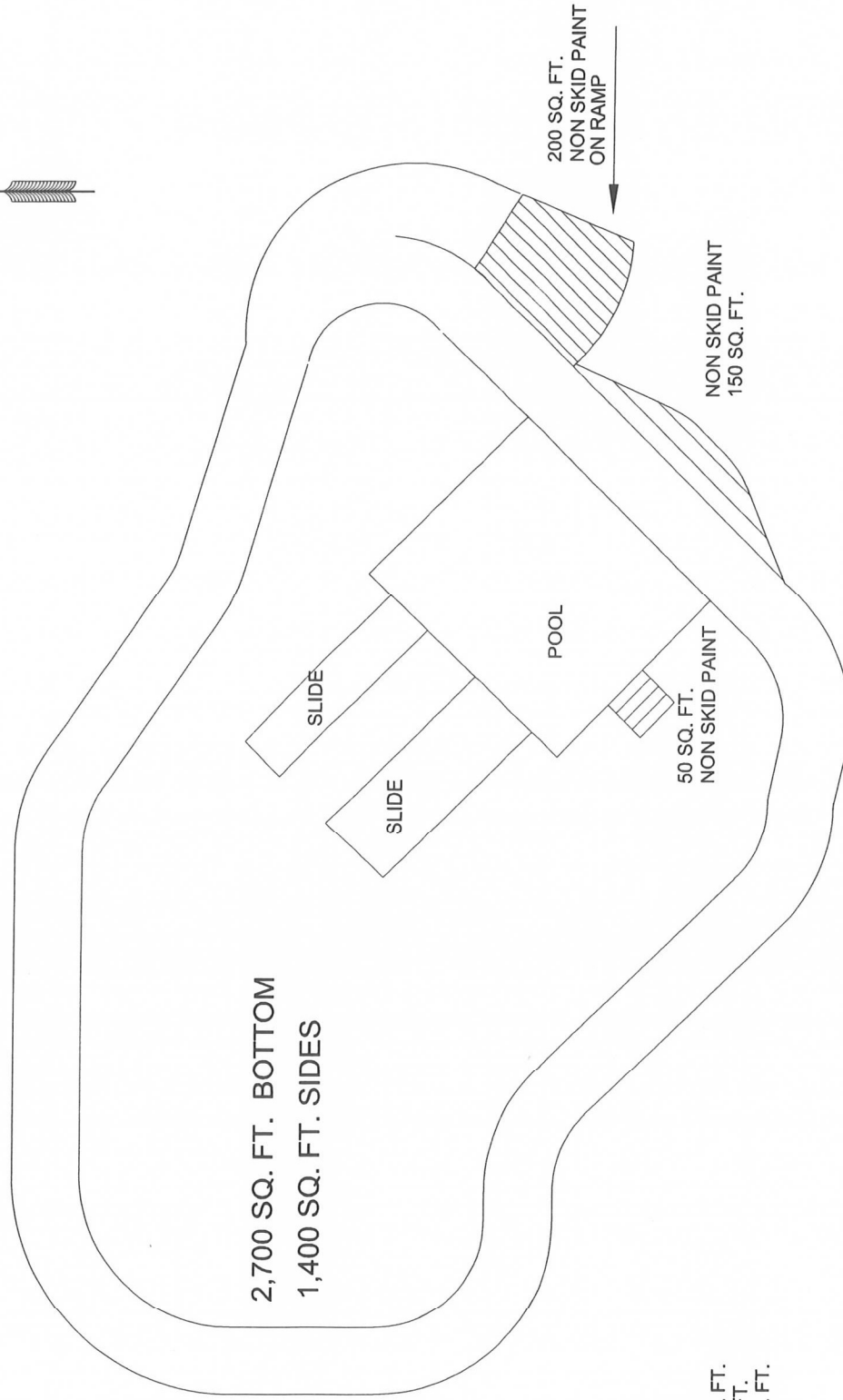
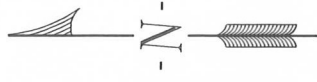
3.7 PROTECTION OF COATING SYSTEMS

- A. Protect surfaces of coating systems from damage during construction.
- B. Touch-up, or repair damaged products before substantial completion.

END OF SECTION 09 96 00



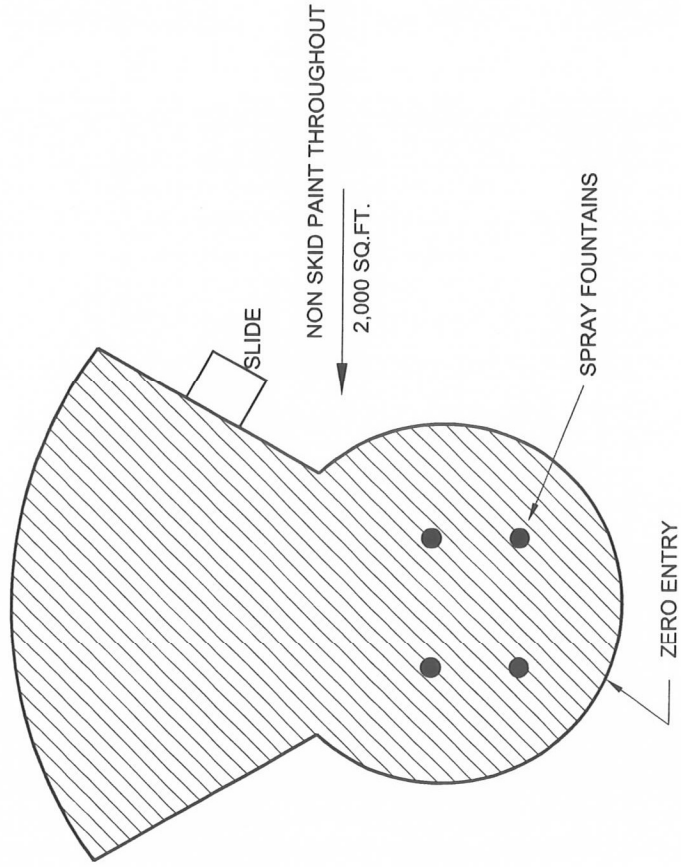
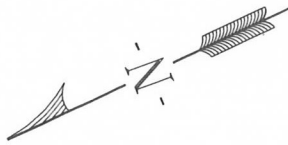
RACING LANE DETAIL



APPROXIMATE AREAS

TOTAL	4,100 SQ. FT.
NON SKID	400 SQ. FT.
STANDARD	3,700 SQ. FT.

LAZY RIVER



<u>APPROXIMATE AREA</u>	
NON SKID	2,000 SQ. FT.

WADING POOL



HI-BUILD EPOXOLINE® II SERIES N69

PRODUCT PROFILE

GENERIC DESCRIPTION	Polyamidoamine Epoxy
COMMON USAGE	An advanced generation epoxy for protection and finishing of steel and concrete. It has excellent resistance to abrasion and is suitable for immersion as well as chemical contact exposure. Contact your local Tnemec representative for a list of chemicals. This product can also be used for lining storage tanks that contain demineralized, deionized or distilled water.
COLORS	Refer to Tnemec Color Guide. 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.
FINISH	Satin
SPECIAL QUALIFICATIONS	This product is part of a coating system tested in accordance with ISO 12944-6 (2018). Contact your Tnemec representative for coating system test results.

COATING SYSTEM

SURFACER/FILLER/PATCHER	Series 215, 217, 218
PRIMERS	Steel: Self-priming or Series 1, 27, 27WB, 37H, 66, L69, L69F, N69F, V69F, 90E-92, 90-97, H90-97, 90G-1K97, 90-98, 91-H ₂ O, 94-H ₂ O, 135, 161, 394, V530 Galvanized Steel and Non-Ferrous Metal: Self-priming or Series 66, L69, L69F, N69F, V69F, 161 Concrete: Self-priming or Series 27WB, 130, 1254 CMU: Self-priming or 130, 1254
TOPCOATS	Series 22, 27WB, 46H-413, 66, L69, L69F, N69, N69F, V69, V69F, 72, 73, 104, 113, 114, 118, 141, 156, 157, 161, 180, 181, 262, 265, 287, 740, 750, 1026, 1028, 1029, 1070, 1070V, 1071, 1071V, 1072, 1072V, 1074, 1074U, 1075, 1075U, 1077, 1078, 1078V, 1080, 1081, 1094, 1095, 1096, 1224. Note: The following recoat times apply for Series N69: Immersion Service—Surface must be scarified after 60 days. Atmospheric Service—After 60 days, scarification or an epoxy tie-coat is required. When topcoating with Series 740 or 750, recoat time for N69 is 21 days for atmospheric service. Contact your Tnemec representative for specific recommendations.

SURFACE PREPARATION

STEEL	Immersion Service: SSPC-SP10/NACE 2 Near-White Blast Cleaning or ISO Sa 2 1/2 Very Thorough Blast Cleaning with a minimum angular anchor profile of 1.5 mils. Non-Immersion Service: SSPC-SP6/NACE 3 Commercial Blast Cleaning or ISO Sa 2 Thorough Blast Cleaning with a minimum angular anchor profile of 1.5 mils. Note: Commercial Blast Cleaning generally produces the best coating performance for this exposure. If conditions will not permit this, in moderate exposures Series N69 may be applied to SSPC-SP2 or SP3 Hand or Power Tool Cleaned surfaces (SSPC Rust Grade Condition C).
GALVANIZED STEEL & NON-FERROUS METAL	Surface preparation recommendations will vary depending on substrate and exposure conditions. Contact your Tnemec representative or Tnemec Technical Services.
CAST/DUCTILE IRON	All external surfaces of ductile iron pipe and fittings shall be delivered to the application facility without asphalt or any other protective lining on the exterior surface. All oils, small deposits of asphalt paint, grease, and soluble deposits should be removed and uniformly abrasive blasted using angular abrasive in accordance with NAF 500-03-04: External Pipe Surface condition. When viewed without magnification, the exterior surfaces shall be free of all visible dirt, dust, loose annealing oxide, rust, mold coating and other foreign matter. Any area where rust reappears before application shall be reblasted. The surface shall contain a minimum angular anchor profile of 1.5 mils (38.1 microns) (Reference NACE RP0287 or ASTM D 4417, Method C).
CONCRETE	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 an ICRI-CSP 2-3 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	Non-Immersion Service: Ask your Tnemec representative for specific recommendations.
PRIMED SURFACES	Immersion Service: Scarify the Series N69 prime coat surface by abrasive-blasting with a fine abrasive before topcoating if: (a) the Series N69 prime coat has been in exterior exposure for 60 days or longer and Series 66, 46H-413, L69, L69F, N69, N69F, V69, V69F or 161 is the specified topcoat; (b) the Series N69 prime coat has been in exterior exposure for 14 days or longer and Series 104 is the specified topcoat; (c) the Series N69 prime coat has been in exterior exposure for 7 days or longer and Series 262 or 265 is the specified topcoat.
ALL SURFACES	Must be clean, dry and free of oil, grease, chalk and other contaminants.

TECHNICAL DATA

VOLUME SOLIDS	67.0 ± 2.0% (mixed) †
RECOMMENDED DFT	2.0 to 10.0 mils (50 to 255 microns) per coat. Note: The number of coats and thickness requirements will vary with substrate, application method and exposure. Contact your Tnemec representative.

HI-BUILD EPOXOLINE® II | SERIES N69

CURING TIME AT 5 MILS DFT

Without 44-700 Accelerator

Temperature	To Handle	To Recoat	Immersion
90°F (32°C)	5 hours	7 hours	7 days
80°F (27°C)	7 hours	9 hours	7 days
70°F (21°C)	9 hours	12 hours	7 days
60°F (16°C)	16 hours	22 hours	9 to 12 days
50°F (10°C)	24 hours	32 hours	12 to 14 days

Curing time varies with surface temperature, air movement, humidity and film thickness. **Note:** For faster curing and low-temperature applications, add No. 44-700 Epoxy Accelerator; see separate product data sheet for cure information.

VOLATILE ORGANIC COMPOUNDS

Unthinned: 2.40 lbs/gallon (285 grams/litre)
Thinned 10% (No. 4 Thinner): 2.80 lbs/gallon (334 grams/litre)
Thinned 10% (No. 60 Thinner): 2.80 lbs/gallon (335 grams/litre)

HAPS

Unthinned: 2.40 lbs/gal solids
Thinned 10% (No. 4 Thinner): 3.25 lbs/gal solids
Thinned 10% (No. 60 Thinner): 2.40 lbs/gal solids

THEORETICAL COVERAGE

1,074 mil sq ft/gal (26.4 m²/L at 25 microns). See APPLICATION for coverage rates. †

NUMBER OF COMPONENTS

Two: Part A (amine) and Part B (epoxy) — One (Part A) to one (Part B) by volume.

PACKAGING

	Part A	Part B	Yield (mixed)
Large Kit	5 gallon pail	5 gallon pail	10 gallons (37.9 L)
Small Kit	1 gallon can	1 gallon can	2 gallons (7.6 L)

NET WEIGHT PER GALLON

13.67 ± 0.25 lbs (6.10 ± .11 kg) (mixed) †

STORAGE TEMPERATURE

Minimum 20°F (-7°C) Maximum 110°F (43°C)

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: 82°F (28°C) Part B: 93°F (34°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.

APPLICATION

COVERAGE RATES

	Dry Mills (Microns)	Wet Mills (Microns)	Sq Ft/Gal (m ² /Gal)
Suggested (1)	6.0 (150)	9.0 (230)	179 (16.6)
Minimum	2.0 (50)	3.0 (75)	537 (49.9)
Maximum	10.0 (250)	15.0 (375)	107 (10.0)

Dense Concrete & Masonry: From 100 to 150 sq ft (9.3 to 13.9 m²) per gallon.

CMU: From 75 to 100 sq ft (7.0 to 9.3 m²) per gallon.

(1) Note for Steel: Roller or brush application requires two or more coats to obtain recommended film thickness. Also, Series N69 can be spray applied to an optional high-build film thickness range of 8.0 to 10.0 dry mills (205 to 255 dry microns) or 11.5 to 14.5 wet mills (209 to 370 wet microns). 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

Start with equal amounts of Series N69 Parts A and B. Power mix contents of each container separately, 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. If Series 44-700 is not being used, proceed with mixing and add an equal volume of Part A to Part B while under agitation. Continue agitation until the two components are thoroughly mixed. **Note:** Both components must be above 50°F (10°C) prior to mixing. For optimum mixing and application properties, the material should be above 60°F (16°C).

If using Series 44-700 accelerator, slowly add four (4) fluid ounces of 44-700 per gallon to Series N69 Part A material while under agitation and proceed with adding Part B. **Note:** The use of more than the recommended amount of 44-700 will adversely affect performance.

Thin by volume and thoroughly mix. Failure to thoroughly mix the Part A and Part B components prior to thinning can affect product's gloss and performance. Do not use mixed material beyond pot life limits. **Note:** For application of the unaccelerated version to surfaces between 50°F to 60°F (10°C to 16°C) or the accelerated version to surfaces between 35°F to 50°F (2°C to 10°C), allow mixed material to stand 30 minutes and restir before using.

THINNING

Use No. 4 or No. 60 Thinner. For air spray, thin up to 10% or 3/4 pint (380 mL) per gallon. For airless spray, roller or brush, thin up to 5% or 1/4 pint (190 mL) per gallon.

POT LIFE

Without 44-700: 6 hours at 50°F (10°C) 4 hours at 75°F (24°C) 1 hour at 100°F (38°C)
 With 44-700: 2 hours at 50°F (10°C) 1 hour at 75°F (24°C) 30 minutes at 100°F (38°C)

SPRAY LIFE

Without 44-700: 1 hour at 75°F (24°C) With 44-700: 30 minutes at 75°F (24°C)

Note: Spray application after listed times will adversely affect ability to achieve recommended dry film thickness.

HI-BUILD EPOXOLINE® II | SERIES N69

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)	50-80 psi (3.4-5.5 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"-0.019" (380-485 microns)	3000-4800 psi (207-330 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.

‡ Spray application of first coat on CMU should be followed by backrolling. **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: Use 3/8" or 1/2" (9.5 mm or 12.7 mm) synthetic woven nap roller cover. Use longer nap to obtain penetration on rough or porous surfaces.

Brush: Recommended for small areas only. Use high quality natural or synthetic bristle brushes.

SURFACE TEMPERATURE

Minimum 50°F (10°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 MEK.

† Values may vary with color.

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CHEMBUILD®

PRODUCT DATA SHEET

SERIES 135

PRODUCT PROFILE

GENERIC DESCRIPTION

Modified Polyamidoamine Epoxy

COMMON USAGE

High-build coating with superior wetting for marginally prepared rusty steel and tightly adhering old coatings. Excellent abrasion-, chemical- and corrosion-resistance. Perfect foundation for aliphatic-polyurethanes. NOT FOR IMMERSION SERVICE.

COLORS

DC74 Off-White, 1243 Metallic Aluminum and more: refer to Tnemec Color Guide.

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.

FINISH

Semi-gloss

PERFORMANCE CRITERIA

Extensive test data available. Contact your Tnemec representative for specific test results.

COATING SYSTEM

PRIMERS

Steel: Self-priming**Galvanized Steel and Non-Ferrous Metal:** Self-priming

TOPCOATS

Series 6, 30, 35, 66, L69, L69F, N69, N69F, V69, V69F, 73, 84, 104, 115, 161, 1028, 1029, 1070, 1071, 1072, 1074, 1074U, 1075, 1075U. **Note:** When topcoating with Endura-Shield polyurethane finish, exterior exposed Series 135 has the following maximum time to recoat: Series 73, 1074/1074U or 1075/1075U, 60 days. Series 1070, 1071 or 1072, 14 days. If these times are exceeded, an epoxy intermediate coat or scarification is required before topcoating. Refer to appropriate topcoat data sheet for additional information.

SURFACE PREPARATION

STEEL

Abrasive blast cleaning to SSPC-SP6/NACE 3 generally produces the best coating performance. If conditions will not permit this, Series 135 may be applied to SSPC-SP2 or SP3 Hand or Power Tool Cleaned surfaces.

GALVANIZED STEEL & NON-FERROUS METAL

Surface preparation recommendations will vary depending on substrate and exposure conditions. Contact your Tnemec representative or Tnemec Technical Services.

PAINTED SURFACES

Test patch is recommended.

ALL SURFACES

Must be clean, dry and free of oil, grease and other contaminants.

TECHNICAL DATA

VOLUME SOLIDS

84.0 ± 2.0% (mixed) †

RECOMMENDED DFT

Conventional Build: 4.0 to 6.0 mils (100 to 150 microns) per coat.**Hi-Build:** 7.0 to 9.0 mils (180 to 230 microns) per coat.

Note: Number of coats and thickness requirements will vary with substrate, application method and exposure. Contact your Tnemec representative.

CURING TIME

Temperature	To Touch	To Handle	To Recoat
75°F (24°C)	6 hours at 5.0 mils DFT (125 microns)	18 hours	24 hours

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

VOLATILE ORGANIC COMPOUNDS

EPA Method 24 **Unthinned:** 0.72 lbs/gallon (86 grams/litre)**Thinned 15% (No. 19 Thinner):** 1.91 lbs/gallon (229 grams/litre)**Thinned 15% (No. 18 Thinner):** 2.05 lbs/gallon (246 grams/litre)**Thinned 15% (No. 62 Thinner):** 0.72 lbs/gallon (86 grams/litre) †

HAPS

Unthinned: 1.29 lbs/gal solids**Thinned 15% (No. 19 Thinner):** 2.54 lbs/gal solids**Thinned 15% (No. 18 Thinner):** 1.29 lbs/gal solids

THEORETICAL COVERAGE

1,347 mil sq ft/gal (33.1 m²/L at 25 microns). See APPLICATION for coverage rates. †

NUMBER OF COMPONENTS

Two: Part A and Part B

MIXING RATIO

By volume: Four (Part A) to one (Part B)

PACKAGING

Five-Gallon Kit: Consists of four gallons of Part A in a five-gallon pail and one gallon of Part B in a one-gallon can. When mixed, yields five gallons (18.9L).

One-Gallon Kit: Consists of a partially filled one-gallon can of Part A and a partially filled one-quart can of Part B. When mixed, yields one gallon (3.79L).

NET WEIGHT PER GALLON

Series 135: 12.30 ± 0.25 lbs (5.58 ± .11 kg) (mixed)

135-1243: 11.52 ± 0.25 lbs (5.23 ± .11 kg) (mixed) †

STORAGE TEMPERATURE

Minimum 20°F (-7°C) Maximum 120°F (49°C)

TEMPERATURE RESISTANCE

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

SHELF LIFE

24 months at recommended storage temperature.

FLASH POINT - SETA

Part A: 75°F (25°C) Part B: 201°F (94°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.

CHEMBUILD® | SERIES 135

APPLICATION

COVERAGE RATES

Conventional Build (Spray, Brush or Roller)

	Dry Mils (Microns)	Wet Mils (Microns)	Sq Ft/Gal (m ² /Gal)
Suggested	5.0 (125)	6.0 (150)	269 (25.0)
Minimum	4.0 (100)	5.0 (125)	337 (31.3)
Maximum	6.0 (150)	7.0 (180)	224 (20.8)

High-Build (Spray Only)

	Dry Mils (Microns)	Wet Mils (Microns)	Sq Ft/Gal (m ² /Gal)
Suggested	8.0 (205)	9.5 (240)	168 (15.6)
Minimum	7.0 (180)	8.5 (215)	192 (17.8)
Maximum	9.0 (230)	11.0 (280)	150 (13.9)

Note: Can be spray applied at 7.0 to 9.0 mils (180 to 230 microns) DFT per coat when extra protection or the elimination of a coat is desired. Can be sprayed at 4.0 to 6.0 mils (100 to 150 microns) DFT per coat for use in systems requiring a conventional build. Brush or roller will normally achieve the 4.0 mil (100 microns) minimum for conventional build application. However, under certain conditions some colors may require two coats to achieve suggested film thickness. 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. Add the contents of the can marked Part B to Part A 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 50°F (10°C) prior to mixing. For application to surfaces between 50°F to 60°F (10°C to 16°C), allow mixed material to stand thirty (30) minutes and restir before using. For optimum application properties, blended components should be above 60°F (16°C).

THINNING

For air or airless spray, thin 10% to 15% or 3/4 pint to 1 1/4 pints (380 to 570 mL) per gallon with No. 19 or No. 62 Thinner. For brush or roller, thin 10% to 15% or 3/4 pint to 1 1/4 pints (380 to 570 mL) per gallon with No. 18 or No. 62 Thinner.

POT LIFE

8 hours at 50°F (10°C) 4 hours at 77°F (25°C) 2 hours 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 .070"	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)	70-90 psi (4.8-6.2 bar)	20-30 psi (1.4-2.1 bar)

Low temperatures or longer hoses require higher pot pressure.

Airless Spray

Tip Orifice	Atomizing Pressure	Mat'l Hose ID	Manifold Filter
0.017"-0.021" (430-535 microns)	3000-4200 psi (207-290 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: Series 135-1243 must be applied by brush or roller to achieve aluminum appearance. For spray application, contact your Tnemec representative.

Roller: Use 3/8" or 1/2" (9.5 mm or 12.7 mm) synthetic woven nap covers.

Brush: Use high quality natural or synthetic bristle brushes.

SURFACE TEMPERATURE

Minimum 50°F (10°C) Maximum 135°F (57°C)

The surface should be dry and at least 5°F (3°C) above the dew point. **Note:** Amine blush may develop during cure if the surface temperature drops below the minimum, particularly under high humidity. Blush must be removed prior to topcoating; contact your Tnemec representative.

CLEANUP

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

† Values may vary with color.

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TNEMEC-FASCURE SERIES 161

PRODUCT PROFILE

GENERIC DESCRIPTION	Polyamide Epoxy
COMMON USAGE	Low temperature-cure, corrosion-resistant coating for protection against abrasion, immersion and mild chemical contact. Fast recoat at 75°F (24°C).
COLORS	Refer to Tnemec Color Guide. 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.
FINISH	Satin

COATING SYSTEM

SURFACER/FILLER/PATCHER	Series 215, 217, 218
PRIMERS	Steel: Self-priming or Series 1, 20, FC20, 37H, 66, L69, L69F, N69, N69F, V69, V69F, 90G-1K97, 90E-92, 90-97, H90-97, 90-98, 91-H2O, 94-H2O, 161, 394, V530 Galvanized Steel and Non-Ferrous Metal: Self-priming Concrete: Self-priming, Series 27WB, 201, 1254 CMU: 130, 1254 Drywall: 151-1051 for dry interior environments
TOPCOATS	Series 27WB, 30, 46H-413, 66, L69, L69F, N69, N69F, V69, V69F, 72, 73, 104, 113, 114, 118, 161, 262, 265, 290, 291, 740, 750, 1026, 1028, 1029, 1070, 1070V, 1071, 1071V, 1072, 1072V, 1074, 1074U, 1075, 1075U, 1077, 1078, 1078V, 1094, 1095, 1096, 1224. Note: A maximum recoat time may apply depending on the topcoat specified. Refer to the applicable topcoat product sheet for information on product specific maximum recoat times.

SURFACE PREPARATION

STEEL	Immersion Service: SSPC-SP10/NACE 2 Near-White Blast Cleaning or ISO Sa 2 1/2 Very Thorough Blast Cleaning with a minimum angular anchor profile of 1.5 mils. Non-Immersion Service: SSPC-SP6/NACE 3 Commercial Blast Cleaning or ISO Sa 2 Thorough Blast Cleaning with a minimum angular anchor profile of 1.5 mils. Note: Commercial Blast Cleaning generally produces the best coating performance for this exposure. If conditions will not permit this, in moderate exposures Series 161 may be applied to SSPC-SP2 or SP3 Hand or Power Tool Cleaned surfaces (SSPC Rust Grade Condition C).
GALVANIZED STEEL & NON-FERROUS METAL	Surface preparation recommendations will vary depending on substrate and exposure conditions. Consult the latest version of Tnemec Technical Bulletin 10-78 or contact your Tnemec representative or Tnemec Technical Services.
CAST/DUCTILE IRON	All external surfaces of ductile iron pipe and fittings shall be delivered to the application facility without asphalt or any other protective lining on the exterior surface. All oils, small deposits of asphalt paint, grease, and soluble deposits should be removed and uniformly abrasive blasted using angular abrasive in accordance with NAF 500-03-04: External Pipe Surface condition. When viewed without magnification, the exterior surfaces shall be free of all visible dirt, dust, loose annealing oxide, rust, mold coating and other foreign matter. Any area where rust reappears before application shall be reblasted. The surface shall contain a minimum angular anchor profile of 1.5 mils (38.1 microns) (Reference NACE RP0287 or ASTM D 4417, Method C).
CONCRETE	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 an ICRI-CSP 2-3 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. Prepare in accordance with SSPC-SP13/NACE 6 to level protrusions and mortar spatter, and remove other contaminants.
PAINTED SURFACES	Non-Immersion Service: Ask your Tnemec representative for specific recommendations.
PRIMED SURFACES	Immersion Service: Scarify the Series 161 prime coat surface by abrasive-blasting with a fine abrasive before topcoating if: (a) the Series 161 has been exterior exposed for 60 days or longer and Series 46H-413, 66, L69, L69F, N69, N69F, V69, V69F or 161 is the specified topcoat; (b) the Series 161 prime coat has been exterior exposed for 14 days or longer and Series 104 is the specified topcoat; (c) the Series 161 prime coat has been exterior exposed for 7 days or longer and Series 262 or 265 is the specified topcoat.
ALL SURFACES	Must be clean, dry and free of oil, grease and other contaminants.

TECHNICAL DATA

VOLUME SOLIDS	58.0 ± 2.0% (mixed) †
RECOMMENDED DFT	2.0 to 6.0 mils (50 to 150 microns) per coat. Note: Number of coats and thickness requirements will vary with substrate, application method and exposure. Contact your Tnemec representative.

TNEME-FASCURE | SERIES 161

CURING TIME

Temperature	To Touch	To Handle	To Recoat	Immersion
75°F (24°C)	1 hour	2-3 hours	3-4 hours	3 days
65°F (18°C)	2 hours	4-5 hours	5-6 hours	4-5 days
55°F (13°C)	3-4 hours	6-8 hours	10-12 hours	6-7 days
45°F (7°C)	6-7 hours	12-14 hours	16-18 hours	9-10 days
35°F (2°C)	8-10 hours	16-18 hours	20-22 hours	12-14 days

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

VOLATILE ORGANIC COMPOUNDS

Unthinned: 2.92 lbs/gallon (349 grams/litre)
Thinned 5%: 3.11 lbs/gallon (372 grams/litre)
Thinned 10%: 3.28 lbs/gallon (393 grams/litre) †

THEORETICAL COVERAGE

930 mil sq ft/gal (22.8 m²/L at 25 microns). See APPLICATION for coverage rates. †

NUMBER OF COMPONENTS

Two: Part A and Part B

PACKAGING

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

NET WEIGHT PER GALLON

12.50 ± 0.25 lbs (5.67 ± .11 kg) †

STORAGE TEMPERATURE

Minimum 20°F (-7°C) Maximum 110°F (43°C)

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: 82°F (28°C) Part B: 64°F (18°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.

APPLICATION

COVERAGE RATES

	Dry Mils (Microns)	Wet Mils (Microns)	Sq Ft/Gal (m ² /Gal)
Suggested (1)	4.0 (100)	7.0 (180)	232 (21.6)
Minimum	2.0 (50)	3.5 (90)	465 (43.2)
Maximum	6.0 (150)	10.5 (265)	155 (14.4)

(1) **Note:** Roller or brush application may require two or more coats to obtain suggested film thickness. 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 should be above 50°F (10°C) prior to mixing. For application to surfaces between 35°F to 50°F (2°C to 10°C), allow mixed material to stand thirty (30) minutes and restir before using. For optimum application properties, blended components should be above 60°F (16°C). **Note:** Mixing ratio is one to one by volume.

THINNING

Use No. 4 Thinner. For air spray, thin up to 10% or 3/4 pint (380 mL) per gallon. For airless spray, roller or brush, thin up to 5% or 1/4 pint (190 mL) per gallon.

POT LIFE

16 hours at 35°F (2°C) 2 hours at 75°F (24°C) 1/2 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 MBC or JGA	E	765 or 78	5/16" or 3/8" (7.9 or 9.5 mm)	3/8" or 1/2" (9.5 or 12.7 mm)	50-80 psi (3.4-5.5 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"-0.019" (380-485 microns)	1800-3000 psi (124-207 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 nap covers.

Brush: Recommended for small areas only. Use high quality natural or synthetic bristle brushes.

SURFACE TEMPERATURE

Minimum 35°F (2°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 MEK.

† Values may vary with color.

TNEME-FASCURE | SERIES 161

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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-H₂O, H91-H₂O, 94-H₂O, 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. For filtration membrane mat lay-up system, please reference the Series 215ML product data sheet.**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, 104, 113, 114, 120-5002, L140, L140F, N140, N140F, V140, V140F, 141, 161, 201, 210, 237SC, 239SC, 251SC, 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 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 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 m²/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)

SURFACING EPOXY | SERIES 215

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)

NET WEIGHT PER GALLON

13.28 ± 0.25 lbs (6.02 ± .11 kg) (mixed) †

STORAGE TEMPERATURE

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.

TEMPERATURE RESISTANCE

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

SHELF LIFE

12 months at recommended storage temperature.

FLASH POINT - SETA

Part A and Part B: 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.

APPLICATION

COVERAGE RATES

†

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

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 reseal 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.

Spray Application Equipment

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	0.031"-0.041"	3500-4500 psi	N/A	6.5 Gallons Stainless Steel
Graco M680 10:1 Ratio	25' 1" Diameter 10' 3/4" Diameter	Flex Hose	No. 5 Nozzle	200 psi (Adjust as necessary)	Adjust at gun for proper atomization	10 Gallons Stainless Steel
Graco M680 10:1 Ratio	25' 1" Diameter 10' 3/4" Diameter	HTX	4C Fine Finish	250 psi (Adjust as necessary)	Adjust at gun for proper atomization	10 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.

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MORTARCRETE®

PRODUCT DATA SHEET

SERIES 217

PRODUCT PROFILE

GENERIC DESCRIPTION	Cementitious Repair Mortar
COMMON USAGE	A single-component, rapid setting, 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, 27WB, 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)
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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.
SHelf LIFE	6 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.

Thickness	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)
Coverage	21.6 (2.01 m ²)	10.8 (1.00 m ²)	7.2 (.67 m ²)	5.4 (.50 m ²)	4.32 (.40 m ²)	3.6 (.33 m ²)	3.0 (.28 m ²)	2.7 (.25 m ²)

Thickness	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)
Coverage	2.4 (.22 m ²)	2.2 (.20 m ²)	2.0 (.19 m ²)	1.8 (.17 m ²)	1.7 (.16 m ²)	1.5 (.14 m ²)	1.4 (.13 m ²)	1.3 (.12 m ²)

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. **Note:** For repair of large bugholes, honeycomb and other cavities deeper than the recommended maximum thickness, 15-20 lbs of locally purchased pea gravel (coarse aggregate) can be post-added with 3.0 to 3.5 quarts of water to Series 217, 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.

Optional: Depending on 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

Begin water curing as soon as the surface has lost its moist sheen. Keep exposed surfaces wet for a minimum of 2 hours. The objective of water curing shall be to maintain a continuously wet surface until the product has achieved sufficient strength. When experiencing extended setting times, due to cold temperature or the use of Series 211-217, longer cure times may be required. 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.

Spray Application Equipment

Pump	Fluid Line	Spray Gun	Fluid Tips	Fluid Pressure	Atomizing Pressure	Hopper
Graco M680 10:1 Ratio	25' 1" Diameter 10' 3/4" Diameter	Flex Hose	No. 5 Nozzle	300 psi (Adjust as necessary)	Adjust at gun for proper atomization	10 Gallons Stainless Steel

Refer to the operation manual for application instructions. **Atomization air must be dry, the use of an after cooler is recommended.**

TEMPERATURE REQUIREMENT

Minimum substrate and ambient application temperature 45°F (7°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.

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