



Exterior Coating Submittal

ISO 8179-2: Tnemec 90-98 Inorganic Zinc-Rich & Asphalt Top-Coat

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| Exterior Coating: | ISO 8179-2: Tnemec 90-98 Inorganic Zinc-Rich & Asphalt Top-Coat |
| Manufacturer: | Tnemec |
| Surface Prep: | Remove oil, grease, and other surface contaminants per NAPF 500-03-01 Abrasive blast clean per NAPF 500-03-04 for pipe, NAPF 500-03-05 for cast fittings |
| Thickness: | Tnemec 90-98 Zinc @ 3-4 mils Nominal DFT Asphalt Top-Coat @ 1 mil DFT |

Notes:

- C&B Piping applies this coating per the Tnemec recommendations attached on the PDS.
- This system meets the ISO 8179-2 specification.

Handling & Storage:

- Careful handling and effective storage are critical in limiting physical and environmental damage to the shop coating.
- All products should be stored off the ground on wood dunnage.
- If field repairs are necessary or desired, please contact C&B Piping for instructions and pricing for materials.



TNAME-ZINC SERIES 90-98

PRODUCT PROFILE

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| GENERIC DESCRIPTION | Ethyl Silicate Inorganic Zinc-Rich |
| COMMON USAGE | Self-curing, corrosion-resistant steel or ductile iron primer with tenacious bonding and abrasion resistance qualities. Its galvanic action resists undercutting. Excellent stand alone performance in high temperature or long-term atmospheric exposure. Finish with specialized topcoats to improve aesthetics, increase long-term performance or protect the primer from attack in aggressive exposures. |
| COLORS | Greenish-Gray |
| ZINC PIGMENT | 85% metallic zinc by weight in dried film. |
| SPECIAL QUALIFICATIONS | Zinc content surpasses requirements of SSPC-PS 12.00 and ISO 8179-Part 2. |
| PERFORMANCE CRITERIA | Test data available. Contact your Tnemec representative for specific test results. |

COATING SYSTEM

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|-----------------|--|
| TOPCOATS | Series 27, 27WB, 46H-413, 46-465, 66, 66HS, L69, L69F, N69, N69F, N140, N140F, 104, 113, 114, 161, 161HS, 971, 1026. |
| REPAIR/TOUCH-UP | Series 90-97, 90G-1K97, 91-H ₂ O, 94-H ₂ O |

SURFACE PREPARATION

| | |
|--------------|--|
| STEEL | Severe Exposure: SSPC-SP10 Near-White Blast-Cleaning Mild Exposure: SSPC-SP6 Commercial Blast-Cleaning |
| 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 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). Pipe: Uniformly abrasive blast using angular abrasive to a 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). Fittings: Uniformly abrasive blast using angular abrasive to a NAF 500-03-05: Fitting Blast Clean #2 condition. When viewed without magnification, no more than 5% staining may remain on the surface and the exterior surfaces shall be free of all visible dirt, dust, 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). |

TECHNICAL DATA

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|-----------------|---|
| VOLUME SOLIDS | 70.0 ± 2.0% (practical) |
| RECOMMENDED DFT | 2.0 to 3.5 mils (50 to 90 microns) per coat. Note: A minimum of 3.5 mils (90 microns) DFT is required to meet the qualifications of ISO 8179 Part 2. Note: Series 90-98 can be applied in one, high-build coat up to 6.0 mils (150 microns) DFT when left untopcoated. |
| CURING TIME | |

| Temperature (50% Relative Humidity) | To Handle | To Recoat |
|--|-----------|----------------|
| 75°F (24°C) | 1 hour | 16 hours |
| 0°F (-18°C) | — | 7 days minimum |

Moisture is required to achieve proper cure. Curing time will vary with temperature and humidity. At relative humidities below 30%, it may be necessary to gently spray the coated surface with water to achieve proper cure and to minimize recoat time. Consult your Tnemec representative for specific recommendations.

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|----------------------------|---|
| VOLATILE ORGANIC COMPOUNDS | Unthinned: 3.48 lbs/gallon (417 grams/litre) Thinned 9% (No. 15 Thinner): 3.75 lbs/gallon (449 grams/litre) Thinned 6% (No. 18 Thinner): 3.75 lbs/gallon (449 grams/litre) |
| HAPS | Unthinned: 0.41 lbs/gal solids Thinned 9% (No. 15 Thinner): 0.49 lbs/gallon solids Thinned 6% No. 18 Thinner): 0.41 lbs/gallon solids |
| THEORETICAL COVERAGE | 1,123 mil sq ft/gal (27.5 m ² /L at 25 microns). See APPLICATION for coverage rates. |
| NUMBER OF COMPONENTS | Two: Part A and Part B |
| PACKAGING | Five-Gallon & One-Gallon Kits: Consist of one premeasured container of liquid (Part A) and one premeasured container of powder (Part B). When mixed, yields four gallons (15.1 L) or one gallon (3.79 L). |
| NET WEIGHT PER GALLON | 23.5 ± 0.5 lbs (10.66 ± 0.27 kg) (mixed) |
| STORAGE TEMPERATURE | Minimum 20°F (-7°C) Maximum 100°F (38°C) |
| TEMPERATURE RESISTANCE | Untopcoated: Dry (Continuous) 750°F (399°C) Intermittent 800°F (427°C) |
| SHELF LIFE | 12 months at recommended storage temperature. |
| FLASH POINT - SETA | Part A: 53°F (12°C) Part B: N/A |

TNEME-ZINC | SERIES 90-98

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

Conventional Build (Spray, Brush or Roller)

| | Dry Mils (Microns) | Wet Mils (Microns) | Sq Ft/Gal (m ² /Gal) |
|-----------|--------------------|---------------------|---------------------------------|
| Suggested | 2.5 (65) | 3.5 (90) | 449 (41.7) |
| Minimum | 2.0 (50) | 3.0 (75) | 561 (52.2) |
| Maximum | 3.5 (90) | 5.0 (130) | 321 (29.8) |

High Build (Spray Only)

| | Dry Mils (Microns) | Wet Mils (Microns) | Sq Ft/Gal (m ² /Gal) |
|-----------|--------------------|---------------------|---------------------------------|
| Suggested | 4.0 (100) | 5.5 (140) | 281 (26.1) |
| Minimum | 3.5 (90) | 5.0 (130) | 321 (29.8) |
| Maximum | 6.0 (150) | 8.5 (215) | 187 (17.4) |

Allow for overspray and surface irregularities. Film thickness is based upon closest 0.5 mil (5 microns). Application of coating below minimum or above maximum recommended dry film thicknesses may adversely affect coating performance.

MIXING

Always use the entire contents of A and B components. Use an air-driven power mixer and keep material under constant agitation while mixing. Slowly sift powder (Part B) into liquid (Part A). **-Do Not Reverse This Procedure-** Adjust mixer speed to break up lumps and mix until the two components are thoroughly blended. Strain through a 35 to 50 mesh (300 to 600 microns) screen before using. Keep under agitation to prevent settling. Do not use mixed material beyond pot life limits.

THINNING

Use No. 15 Thinner below 80°F (27°C); No. 18 Thinner above 80°F (27°C). For air spray, thin up to 9% or 3/4 pint (380 mL) per gallon. For airless spray, thin up to 5% or 1/4 pint (190 mL) per gallon.

POT LIFE

16 hours at 60°F (16°C) 12 hours at 77°F (25°C) 7 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 MBC | E | 704 | 5/16" or 3/8" (7.9 or 9.5 mm) | 3/8" or 1/2" (9.5 or 12.7 mm) | 30-40 psi (2.1-2.8 bar) | 15-25 psi (1) (1.0-1.7 bar) |

(1) For 25 ft (7.6 m) length of material hose. Low temperatures or longer hoses will require additional pressure. Use pressure pot equipped with an agitator and keep pressure pot at same level or higher than the spray gun. If work is stopped for 10 to 15 minutes, do not allow material to remain in hose. Shut off pot pressure at the fluid regulator and open pressure relief valve. Loosen spray gun cap ring three turns, hold cloth over air cap and pull trigger to force the material in the hose back into the pot. Keep material under agitation during shut-down, but do not repressurize pot until ready to resume work.

Airless Spray

| Tip Orifice | Atomizing Pressure | Mat'l Hose ID | Manifold Filter |
|--|--------------------------------|---------------------------------|--------------------------|
| 0.021"-0.023" (535-585 microns) Reversible Tip | 2000-3000 psi (135-207 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.

Keep material agitated to prevent settling. If work is stopped for 15 minutes or more, recirculate material to assure that only well-agitated material is in fluid lines before spraying is resumed.

Note: When applying recommended topcoats over this primer, 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.

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

SURFACE TEMPERATURE

Minimum 0°F (-18°C) Maximum 120°F (49°C)

The surface should be dry and at least 5°F (3°C) above the dew point. At temperatures below 32°F (0°C), the surface must be free of ice and/or frost.

CLEANUP

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

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Allstates Coatings Co.®

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PRODUCT INFORMATION

ALT-220 Acryspphalt™

ALT-220 Acryspphalt™

USER friendly, complies with all V.O.C. emissions and E.P.A. standards.



Certified to
NSF/ANSI 61

GENERAL: A non-flammable asphalt emulsion blended with an extremely high concentration of unique polymer and plasticizers to achieve extreme adherence to the substrate, durability and flexibility. **Acryspphalt™** is a black one component, sprayable or dipped coating specially designed to protect from corrosion, water and environmental elements for prime or top coat on any zinc, surface-metal, concrete, wood or brick.

SURFACE

PREPARATION: Surface must be dry, free from dirt, dust and oil. If necessary, dirt, loose pieces of coatings or chemical residue should be removed. For best results, DO NOT use when surface is wet or when temperatures are below 40°F (4.4°C). **CAUTION:** Wear adequate eye protection and breathing apparatus during cleaning and coating procedure.

APPLICATION: Mix **Acryspphalt™** before using. No thinning is necessary. Apply by dipping or with adequate spray or other appropriate equipment. NSF Certified - Maximum 4 mils DFT, 96 hours cure at 77°F (25°C). For interior application plenty of ventilation and fresh air is required.

COVERAGE: For estimation purposes use 860+ sq. feet per gallon (1 mil dry film)

CAUTION: **KEEP FROM FREEZING.** DO NOT store in direct sunlight or where temperatures exceed 100°F (37.8°C). Container should be closed when not in use. Keep out of the reach of children. Wash tools in water. Use paint thinner if material has dried.

PACKAGING: 5 gallon pails, 55 gallon drums, 275/330 gallon tote tanks and bulk.

Material Specifications:

Requirements:

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| Weight per Gallon @ 77°F, ASTM D1010, (lbs) | 8.30 - 8.60 |
| Nonvolatile %, ASTM D2939 | 50.00 - 54.00 |
| Viscosity @ 77°F, ASTM D562 (Kreb's Stormer Unit) | 58 - 70 KU |
| Softening Point (0°F), ASTM D36 | >250 |
| Penetration (0.1 mm), ASTM D5 | 25-30 |
| V.O.C. (lbs per gallon) | 0.00-0.06 |
| Std. Spec. for Emulsified Asphalt | |
| AASHTO Designation M140-70 | meets spec. |
| ASTM Designation D977-73 | meets spec. |
| Salt Fog, ASTM B117; 2ml/hr (FIRST appearance of rust) | 198 hrs, no blistering, no loss of |
| | adhesion or re-emulsification |
| Resistance to water, ASTM D2939 | no blistering, no loss of adhesion, |
| | no re-emulsification |
| Dry Time (mins) ASTM D2939 @ 5 mil wet | 5-10 |
| Shelf Life (yrs) | 6 months |

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