



ENGINEERING CLARIFICATION

EC TITLE: Specification Section 09 90 00, Paintings and Coatings

PROJECT: 3 Kings Water Treatment Plant

EC NO.: 10

DATE: 3/31/2020

STATUS: Open

SECTION 1: BY CONTRACTOR

QUESTION:

Paintings and coatings specification missing coatings system specification for aluminium embedded in concrete.

DRAWING NO.:

SPECIFICATION SECTION: 09 90 00Painting and Coating

POTENTIAL COST IMPACT:

POTENTIAL SCHEDULE IMPACT:

PROPOSED SOLUTION:

Revised specification to include coating system as shown in the attached.

COMMENTS:

INITIATOR: Zalla, Joseph/SLC

PRIORITY: Normal

ANTICIPATED RESPONSE DATE:

SECTION 2: BY REVIEWER

RESPONSE:

COMMENTS:

REVIEWED BY:

REVIEWED DATE:

**SECTION 09 90 00
PAINTING AND COATING**

PART 1 GENERAL

1.01 REFERENCES

- A. The following is a list of standards which may be referenced in this section:
1. American Water Works Association (AWWA):
 - a. C203, Coal-Tar Protective Coatings and Linings for Steel Water Pipelines—Enamel and Tape—Hot-Applied.
 - b. C209, Cold-Applied Tape Coatings for the Exterior of Special Sections, Connections, and Fittings for Steel Water Pipelines.
 - c. C213, Fusion-Bonded Epoxy Coating for the Interior and Exterior of Steel Water Pipelines.
 - d. C214, Tape Coating Systems for the Exterior of Steel Water Pipelines.
 2. National Association of Pipe Fabricators (NAPF):
 - a. 500-03, Surface Preparation Standard for Ductile Iron Pipe and Fittings in Exposed Locations Receiving Special External Coatings and/or Special Internal Linings:
 - 1) 500-03-04, Abrasive Blast Cleaning for Ductile Iron Pipe.
 - 2) 500-03-05, Abrasive Blast Cleaning for Cast Ductile Iron Fittings.
 3. Environmental Protection Agency (EPA).
 4. NACE International (NACE): SP0188, Discontinuity (Holiday) Testing of New Protective Coatings on Conductive Substrates.
 5. NSF International (NSF): 61, Drinking Water System Components - Health Effects.
 6. Occupational Safety and Health Act (OSHA).
 7. Research Council on Structural Connections (RCSC): Specification for Structural Joints using High-Strength Bolts.
 8. The Society for Protective Coatings (SSPC):
 - a. PA 2, Procedure for Determining Conformance to Dry Coating Thickness Requirements.
 - b. PA 10, Guide to Safety and Health Requirements for Industrial Painting Projects.
 - c. SP 1, Solvent Cleaning.
 - d. SP 2, Hand Tool Cleaning.
 - e. SP 3, Power Tool Cleaning.
 - f. SP 5, White Metal Blast Cleaning.
 - g. SP 6, Commercial Blast Cleaning.

- h. SP 7, Joint Surface Preparation Standard Brush-Off Blast Cleaning.
- i. SP 10, Near-White Blast Cleaning.
- j. SP 11, Power Tool Cleaning to Bare Metal.
- k. SP 16, Brush-Off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-Ferrous Metals.
- l. SP 13, Surface Preparation of Concrete.
- m. Guide 15, Field Methods for Retrieval and Analysis of Soluble Salts on Steel and Other Nonporous Substrates.

1.02 DEFINITIONS

A. Terms used in this section:

- 1. Coverage: Total minimum dry film thickness in mils or square feet per gallon.
- 2. FRP: Fiberglass Reinforced Plastic.
- 3. HCl: Hydrochloric Acid.
- 4. MDFT: Minimum Dry Film Thickness, mils.
- 5. MDFTPC: Minimum Dry Film Thickness per Coat, mils.
- 6. Mil: Thousandth of an inch.
- 7. NAPF: National Association of Pipe Fabricators.
- 8. PPDS: Paint Product Data Sheet.
- 9. PSDS: Paint System Data Sheet.
- 10. PVC: Polyvinyl Chloride.
- 11. SFPG: Square Feet per Gallon.
- 12. SFPGPC: Square Feet per Gallon per Coat.
- 13. SP: Surface Preparation.

1.03 SUBMITTALS

A. Action Submittals:

- 1. Shop Drawings:
 - a. Data Sheets:
 - 1) For each product, furnish a Paint Product Data Sheet (PPDS), the manufacturer's technical data sheets, and paint colors available (where applicable). The PPDS form is appended to the end of this section.
 - 2) For each paint system, furnish a Paint System Data Sheet (PSDS). The PSDS form is appended to the end of this section.
 - 3) Technical and performance information that demonstrates compliance with specification.

- 4) Furnish copies of paint system submittals to the coating applicator.
- 5) Indiscriminate submittal of only manufacturer's literature is not acceptable.
- b. Detailed chemical and gradation analysis for each proposed abrasive material.

B. Informational Submittals:

1. Applicator's Qualification:
 - a. List of references substantiating experience.
 - b. Relevant SSPC certification for paint application.
2. Coating manufacturer's Certificate of Compliance, in accordance with Section 01 43 33, Manufacturers' Field Services.
3. Factory Applied Coatings: Manufacturer's certification stating factory applied coating system meets or exceeds requirements specified.
4. Manufacturer's written verification that submitted material is suitable for the intended use.
5. Coating for Faying Surfaces: Manufacturer's test results that show the proposed coating meets the slip resistance requirements of the AISC Specification for Structural Joints using ASTM A325 or ASTM A490 bolts.
6. If the manufacturer of finish coating differs from that of shop primer, provide finish coating manufacturer's written confirmation that materials are compatible.
7. Manufacturer's written instructions and special details for applying each type of paint.

1.04 QUALITY ASSURANCE

- A. Applicator Qualifications: Minimum 5 years' experience in application of specified products.
- B. Regulatory Requirements:
 1. Meet federal, state, and local requirements limiting the emission of volatile organic compounds.
 2. Perform surface preparation and painting in accordance with recommendations of the following:
 - a. Paint manufacturer's instructions.
 - b. SSPC PA 10.
 - c. Federal, state, and local agencies having jurisdiction.

C. Mockup:

1. Before proceeding with Work under this section, finish one complete space or item of each color scheme required showing selected colors, finish texture, materials, quality of work, and special details.
2. After Engineer approval, sample spaces or items shall serve as a standard for similar work throughout the Project.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Shipping:

1. Where precoated items are to be shipped to the Site, protect coating from damage. Batten coated items to prevent abrasion.
2. Protect shop painted surfaces during shipment and handling by suitable provisions including padding, blocking, and use of canvas or nylon slings.

B. Storage:

1. Store products in a protected area that is heated or cooled to maintain temperatures within the range recommended by paint manufacturer.
2. Primed surfaces shall not be exposed to weather for more than 2 months before being topcoated, or less time if recommended by coating manufacturer.

1.06 PROJECT CONDITIONS

A. Environmental Requirements:

1. Do not apply paint in temperatures or moisture conditions outside of manufacturer's recommended maximum or minimum allowable.
2. Do not perform final abrasive blast cleaning whenever relative humidity exceeds 85 percent, or whenever surface temperature is less than 5 degrees F above dew point of ambient air.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Nationally recognized manufacturers of paints and protective coatings who are regularly engaged in the production of such materials for essentially identical service conditions.
- B. Minimum of 5 years' verifiable experience in manufacture of specified product.

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C. Each of the following manufacturers is capable of supplying most of the products specified herein for Protective Coatings:

1. Azko Nobel (Devoe; International).
2. Carboline.
3. PPG.
4. Sherwin-Williams.
5. Tnemec.

D. Each of the following manufacturers is capable of supplying most of the products specified herein for Architectural Coatings:

1. Sherwin-Williams.
2. Benjamin Moore.
3. PPG Porter Paints.
4. Minwax.

2.02 ABRASIVE MATERIALS

A. Select abrasive type and size to produce surface profile that meets coating manufacturer's recommendations for specific primer and coating system to be applied.

2.03 PAINT MATERIALS

A. General:

1. Manufacturer's highest quality products suitable for intended service.
2. Compatibility: Only compatible materials from a single manufacturer shall be used in the Work. Particular attention shall be directed to compatibility of primers and finish coats.
3. Thinners, Cleaners, Driers, and Other Additives: As recommended by coating manufacturer.

B. Products:

Product	Definition
Acrylic Latex	Single-component, finish as required
Alkyd Enamel	Optimum quality, gloss or semigloss finish as required, medium long oil
Alkyd Wood Primer	Flat alkyd
Bituminous Paint	Single-component, coal-tar pitch based

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Product	Definition
Block Filler	Primer-sealer designed for rough masonry surfaces, 100% acrylic emulsion
Coal-Tar Epoxy	Amine, polyamide, or phenolic epoxy type 70% volume solids minimum, suitable for immersion service
Epoxy Filler/Surfacer	100% solids epoxy trowel grade filler and surfacer, nonshrinking, suitable for application to concrete and masonry. Approved for potable water contact and conforming to NSF 61, where required
Epoxy Nonskid (Aggregated)	Polyamidoamine or amine converted epoxies aggregated; aggregate may be packaged separately
Epoxy Primer— Ferrous Metal	Anticorrosive, converted epoxy primer containing rust-inhibitive pigments
Epoxy Primer— Other	Epoxy primer, high-build, as recommended by coating manufacturer for specific galvanized metal, copper, or nonferrous metal alloy to be coated
High Build Epoxy	Polyamidoamine epoxy, minimum 69% volume solids, capability of 4 to 8 MDFT per coat
NSF Epoxy	Polyamidoamine epoxy, approved for potable water contact and conforming to NSF 61
Polyurethane Enamel	Two-component, aliphatic or acrylic based polyurethane; high gloss finish
Organic Zinc Rich Primer	Epoxy or moisture cured urethane with 85-percent zinc content in the dry film, meeting the requirements of RCSC Specification for Structural Joints using High Strength Bolts, Class A or Class B, as required.
Rust-Inhibitive Primer	Single-package steel primers with anticorrosive pigment loading
Sanding Sealer	Co-polymer oil, clear, dull luster
Stain, Wood	Satin luster, linseed oil, solid or semi-transparent as required
Varnish	Nonpigmented vehicle based on a variety of resins (alkyd, phenolic, urethane) in gloss, semigloss, or flat finishes, as required

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2.04 MIXING

- A. Multiple-Component Coatings:
 - 1. Prepare using each component as packaged by paint manufacturer.
 - 2. No partial batches will be permitted.
 - 3. Do not use multiple-component coatings that have been mixed beyond their pot life.
 - 4. Furnish small quantity kits for touchup painting and for painting other small areas.
 - 5. Mix only components specified and furnished by paint manufacturer.
 - 6. Do not intermix additional components for reasons of color or otherwise, even within the same generic type of coating.

- B. Colors: Formulate paints with colorants free of lead, lead compounds, or other materials that might be affected by presence of hydrogen sulfide or other gas likely to be present at Site.

2.05 SHOP FINISHES

- A. Shop Blast Cleaning: Reference Paragraph, Shop Coating Requirements.

- B. Surface Preparation: Provide Owner minimum 7 days' advance notice to start of shop surface preparation work and coating application work.

- C. Shop Coating Requirements:
 - 1. When required by equipment specifications, such equipment shall be primed and finish coated in shop by manufacturer and touched up in field with identical material after installation.
 - 2. Where manufacturer's standard coating is not suitable for intended service condition, Engineer may approve use of a tie-coat to be used between manufacturer's standard coating and specified field finish. In such cases, tie-coat shall be surface tolerant epoxy as recommended by manufacturer of specified field finish coat. Coordinate details of equipment manufacturer's standard coating with field coating manufacturer.

- D. Pipe:
 - 1. Ductile Iron Pipe:
 - a. Use NAPF standards as a guide for desired prepared surface. Follow recommendations of pipe and coating manufacturers for means and methods to achieve SSPC-equivalent surface.
 - b. The surface preparation and application of the primer and finish coats shall be performed by pipe manufacturer.

- c. For high performance (epoxy) coatings, follow additional recommendations of pipe and coating manufacturers.
 - d. Prior to blast cleaning, grind smooth surface imperfections, including, but not limited to delaminating metal or oxide layers.
 - e. For conventional (alkyd) coatings, clean asphalt varnish supplied on pipe and apply one full coat of a tar stop before two full coats of the color coats specified.
2. Steel Pipe:
- a. Surface preparation and application of primer shall be performed by pipe manufacturer.
 - b. For pipe with epoxy lining, do not place end cap seals until pipe lining material has sufficiently dried.

PART 3 EXECUTION

3.01 GENERAL

- A. Provide Owner minimum 7 days' advance notice to start of field surface preparation work and coating application work.
- B. Perform the Work only in presence of Engineer, unless Engineer grants prior approval to perform the Work in Engineer's absence.
- C. Schedule inspection of cleaned surfaces and all coats prior to succeeding coat in advance with Owner.

3.02 EXAMINATION

- A. Factory Finished Items:
 - 1. Schedule inspection with Owner before repairing damaged factory-finished items delivered to Site.
 - 2. Repair abraded or otherwise damaged areas on factory-finished items as recommended by coating manufacturer. Carefully blend repaired areas into original finish. If required to match colors, provide full finish coat in field.
- B. Surface Preparation Verification: Inspect and provide substrate surfaces prepared in accordance with these Specifications and printed directions and recommendations of paint manufacturer whose product is to be applied. The more stringent requirements shall apply.

3.03 PROTECTION OF ITEMS NOT TO BE PAINTED

- A. Remove, mask, or otherwise protect hardware, lighting fixtures, switchplates, aluminum surfaces, machined surfaces, couplings, shafts, bearings,

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nameplates on machinery, and other surfaces not specified elsewhere to be painted.

- B. Provide drop cloths to prevent paint materials from falling on or marring adjacent surfaces.
- C. Protect working parts of mechanical and electrical equipment from damage during surface preparation and painting process.
- D. Mask openings in motors to prevent paint and other materials from entering.
- E. Protect surfaces adjacent to or downwind of Work area from overspray.

3.04 SURFACE PREPARATION

A. Field Abrasive Blasting:

- 1. Perform blasting for items and equipment where specified and as required to restore damaged surfaces previously shop or field blasted and primed or coated.
- 2. Refer to coating systems for degree of abrasive blasting required.
- 3. Where the specified degree of surface preparation differs from manufacturer's recommendations, the more stringent shall apply.

B. Surface Contamination Testing:

- 1. A surface contamination analysis test shall be performed every 500 square feet by means of a Chlor Test CSN Salts or approved equivalent.
- 2. Surface with chloride levels exceeding 3 µg/square centimeter for submerged surfaces and 5 µg/square centimeter for exposed surfaces shall be treated with a liquid soluble salt remover equivalent to CHLOR*RID (CHLOR*RID International, Chandler, AZ).
- 3. Follow manufacturer's recommendations and procedures for the use of this product to remove the surface contamination.

C. Metal Surface Preparation:

- 1. Where indicated, meet requirements of SSPC Specifications summarized below:
 - a. SP 1, Solvent Cleaning: Removal of visible oil, grease, soil, drawing and cutting compounds, and other soluble contaminants by cleaning with solvent.
 - b. SP 2, Hand Tool Cleaning: Removal of loose rust, loose mill scale, loose paint, and other loose detrimental foreign matter, using nonpower hand tools.

- c. SP 3, Power Tool Cleaning: Removal of loose rust, loose mill scale, loose paint, and other loose detrimental foreign matter, using power-assisted hand tools.
 - d. SP 5, White Metal Blast Cleaning: Removal of visible oil, grease, dust, dirt, mill scale, rust, coatings, oxides, corrosion products, and other foreign matter by blast cleaning.
 - e. SP 6, Commercial Blast Cleaning: Removal of visible oil, grease, dust, dirt, mill scale, rust, coatings, oxides, corrosion products, and other foreign matter, except for random staining limited to no more than 33 percent of each unit area of surface which may consist of light shadows, slight streaks, or minor discolorations caused by stains of rust, stains of mill scale, or stains of previously applied coatings.
 - f. SP 7, Brush-Off Blast Cleaning: Removal of visible rust, oil, grease, soil, dust, loose mill scale, loose rust, and loose coatings. Tightly adherent mill scale, rust, and coating may remain on surface.
 - g. SP 10, Near-White Blast Cleaning: Removal of visible oil, grease, dust, dirt, mill scale, rust, coatings, oxides, corrosion products, and other foreign matter, except for random staining limited to no more than 5 percent of each unit area of surface which may consist of light shadows, slight streaks, or minor discolorations caused by stains of rust, stains of mill scale, or stains of previously applied coatings.
 - h. SP 11, Power Tool Cleaning to Bare Metal: Removal of visible oil, grease, dirt, dust, mill scale, rust, paint, oxide, corrosion products, and other foreign matter using power-assisted hand tools capable of producing suitable surface profile. Slight residues of rust and paint may be left in lower portion of pits if original surface is pitted.
 - i. SP-16, Brush Blasting of Non-Ferrous Metals: A brush-off blast cleaned non-ferrous metal surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, metal oxides (corrosion products), and other foreign matter. Intact, tightly adherent coating is permitted to remain. A coating is considered tightly adherent if it cannot be removed by lifting with a dull putty knife. Bare metal substrates shall have a minimum profile of 19 micrometers (0.75 mil).
2. The words “solvent cleaning”, “hand tool cleaning”, “wire brushing”, and “blast cleaning”, or similar words of equal intent in these Specifications or in paint manufacturer’s specification refer to the applicable SSPC Specification.
 3. Where OSHA or EPA regulations preclude standard abrasive blast cleaning, wet or vacu-blast methods may be required. Coating

- manufacturers' recommendations for wet blast additives and first coat application shall apply.
4. Ductile Iron Pipe Supplied with Asphaltic Varnish Finish: Remove asphaltic varnish finish prior to performing specified surface preparation.
 5. Hand tool clean areas that cannot be cleaned by power tool cleaning.
 6. Round or chamfer sharp edges and grind smooth burrs, jagged edges, and surface defects.
 7. Welds and Adjacent Areas:
 - a. Prepare such that there is:
 - 1) No undercutting or reverse ridges on weld bead.
 - 2) No weld spatter on or adjacent to weld or any area to be painted.
 - 3) No sharp peaks or ridges along weld bead.
 - b. Grind embedded pieces of electrode or wire flush with adjacent surface of weld bead.
 8. Preblast Cleaning Requirements:
 - a. Remove oil, grease, welding fluxes, and other surface contaminants prior to blast cleaning.
 - b. Cleaning Methods: Steam, open flame, hot water, or cold water with appropriate detergent additives followed with clean water rinsing.
 - c. Clean small isolated areas as above or solvent clean with suitable solvent and clean cloth.
 9. Blast Cleaning Requirements:
 - a. Type of Equipment and Speed of Travel: Design to obtain specified degree of cleanliness. Minimum surface preparation is as specified herein and takes precedence over coating manufacturer's recommendations.
 - b. Select type and size of abrasive to produce surface profile that meets coating manufacturer's recommendations for particular primer to be used.
 - c. Use only dry blast cleaning methods.
 - d. Do not reuse abrasive, except for designed recyclable systems.
 - e. Meet applicable federal, state, and local air pollution and environmental control regulations for blast cleaning, confined space entry (if required), and disposition of spent aggregate and debris.
 10. Post-Blast Cleaning and Other Cleaning Requirements:
 - a. Clean surfaces of dust and residual particles from cleaning operations by dry (no oil or water vapor) air blast cleaning or other method prior to painting. Vacuum clean enclosed areas and other areas where dust settling is a problem and wipe with a tack cloth.

- b. Paint surfaces the same day they are blasted. Reblast surfaces that have started to rust before they are painted.

D. Galvanized Metal, Copper, and Nonferrous Metal Alloy Surface Preparation:

- 1. Remove soil, cement spatter, and other surface dirt with appropriate hand or power tools.
- 2. Brush blast in accordance with SSPC SP 16.
- 3. Obtain and follow coating manufacturer's recommendations for additional preparation that may be required.

E. Concrete Surface Preparation:

- 1. Do not begin until 30 days after concrete has been placed, or longer if required to meet coating manufacturer's limit for moisture in the concrete.
- 2. Prepare surfaces and provide a concrete profile by abrasive blasting, SSPC SP-13, or by high-pressure water blasting, 4,000 psi minimum. Minimum surface profile shall meet ICRI CSP 3 to 5, or higher if required by coating manufacturer.
- 3. Remove grease, oil, dirt, salts, chemicals, loose materials, or other foreign matter by solvent, detergent, or other suitable cleaning methods.
- 4. Brush-off blast clean to remove loose concrete and laitance, and provide a tooth for binding. Upon approval by Engineer, surface may be cleaned by acid etching method. Approval is subject to producing desired profile equivalent to No. 80 grit flint sandpaper. Acid etching of vertical or overhead surfaces shall not be allowed.
- 1. Ensure that concrete surfaces are sufficiently dry prior to coating.
 - a. Test for moisture using plastic sheets in accordance with ASTM D4263.
- 2. If the test indicates moisture is present, conduct tests to determine moisture content in accordance with ASTM F1869. If the moisture content exceeds 3 pounds per 1,000 square feet in a 24-hour period, provide the manufacturer's recommendations for mitigation of moisture effect on lining application and long-term lining performance.
- 3. Concrete Defects: Fill holes and cracks with manufacturer's recommended materials. Secure the manufacturer's recommendations for additional preparation if required for excessive bug holes exposed after blasting.

F. Plastic and FRP Surface Preparation:

- 1. Hand sand plastic surfaces to be coated with medium grit sandpaper to provide tooth for coating system.

2. Large areas may be power sanded or brush-off blasted, provided sufficient controls are employed so surface is roughened without removing excess material.

G. Masonry Surface Preparation:

1. Complete and cure masonry construction for 14 days or more before starting surface preparation work.
2. Remove oil, grease, dirt, salts or other chemicals, loose materials, or other foreign matter by solvent, detergent washing, or other suitable cleaning methods.
3. Clean masonry surfaces of mortar and grout spillage and other surface deposits using one of the following:
 - a. Nonmetallic fiber brushes and commercial muriatic acid followed by rinsing with clean water.
 - b. Brush-off blasting.
 - c. Water blasting.
4. Do not damage masonry mortar joints or adjacent surfaces.
5. Leave surfaces clean and, unless otherwise required for proper adhesion, dry prior to painting.
6. Masonry Surfaces to be Painted: Uniform texture and free of surface imperfections that would impair intended finished appearance.
7. Masonry Surfaces to be Clear Coated: Free of discolorations and uniform in texture after cleaning.

H. Wood Surface Preparation:

1. Replace damaged wood surfaces or repair in a manner acceptable to Engineer prior to start of surface preparation.
2. Solvent clean (mineral spirits) knots and other resinous areas and coat with shellac or other knot sealer, prior to painting. Remove pitch by scraping and wipe clean with mineral spirits or turpentine prior to applying knot sealer.
3. Round sharp edges by light sanding prior to priming.
4. Filler:
 - a. Synthetic-based wood putty approved by paint manufacturer for paint system.
 - b. For natural finishes, color of wood putty shall match color of finished wood.
 - c. Fill holes, cracks, and other surface irregularities flush with surrounding surface and sand smooth.
 - d. Apply putty before or after prime coat, depending on compatibility and putty manufacturer's recommendations.
 - e. Use cellulose type putty for stained wood surfaces.
5. Ensure surfaces are clean and dry prior to painting.

- I. Gypsum Board Surface Preparation: Typically, new gypsum board surfaces need no special preparation before painting.
 - 1. Surface Finish: Dry, free of dust, dirt, powdery residue, grease, oil, or any other contaminants.

- J. Existing Painted Surfaces to be Repainted Surface Preparation:
 - 1. Detergent wash and freshwater rinse.
 - 2. Clean loose, abraded, or damaged coatings to substrate by hand or power tool, SP 2 or SP 3.
 - 3. Feather surrounding intact coating.
 - 4. Apply one spot coat of specified primer to bare areas, overlapping prepared existing coating.
 - 5. Apply one full finish coat of specified primer to entire surface.
 - 6. If an aged, plural-component material is to be topcoated, contact coating manufacturer for additional surface preparation requirements.
 - 7. Application of Cosmetic Coat:
 - a. It is assumed that existing coatings have oxidized sufficiently to prevent lifting or peeling when overcoated with paints specified.
 - b. Check compatibility by application to a small area prior to starting painting.
 - c. If lifting or other problems occur, request disposition from Engineer.
 - 8. Perform blasting as required to restore damaged surfaces. Materials, equipment, procedures shall meet requirements of SSPC.

3.05 SURFACE CLEANING

- A. Brush-off Blast Cleaning:
 - 1. Equipment, procedure, and degree of cleaning shall meet requirements of SSPC SP 7.
 - 2. Abrasive: Either wet or dry blasting sand, grit, or nutshell.
 - 3. Select various surface preparation parameters, such as size and hardness of abrasive, nozzle size, air pressure, and nozzle distance from surface such that surface is cleaned without pitting, chipping, or other damage.
 - 4. Verify parameter selection by blast cleaning a trial area that will not be exposed to view.
 - 5. Engineer will review acceptable trial blast cleaned area and use area as a representative sample of surface preparation.
 - 6. Repair or replace surface damaged by blast cleaning.

B. Acid Etching:

1. After precleaning, spread the following solution by brush or plastic sprinkling can: One part commercial muriatic acid reduced by two parts water by volume. Adding acid to water in these proportions gives an approximate 10 percent solution of HCl.
2. Application:
 - a. Rate: Approximately 2 gallons per 100 square feet.
 - b. Work acid solution into surface by hard-bristled brushes or brooms until complete wetting and coverage is obtained.
 - c. Acid will react vigorously for a few minutes, during which time brushing shall be continued.
 - d. After bubbling subsides (10 minutes), hose down remaining slurry with high pressure clean water.
 - e. Rinse immediately to avoid formation on the surface of salts that are difficult to remove.
 - f. Thoroughly rinse to remove any residual acid surface condition that may impair adhesion.
3. Ensure surface is completely dry before application of coating.
4. Apply acid etching to obtain a "grit sandpaper" surface profile. If not, repeat treatment.

C. Solvent Cleaning:

1. Consists of removal of foreign matter such as oil, grease, soil, drawing and cutting compounds, and any other surface contaminants by using solvents, emulsions, cleaning compounds, steam cleaning, or similar materials and methods that involve a solvent or cleaning action.
2. Meet requirements of SSPC SP 1.

3.06 APPLICATION

A. General:

1. The intention of these Specifications is for new, interior and exterior wood, masonry, concrete, and metal, and submerged metal surfaces to be painted, whether specifically mentioned or not, except as specified otherwise. Do not paint exterior concrete surfaces, unless specifically indicated.
2. Extent of Coating (Immersion): Coatings shall be applied to internal vessel and pipe surfaces, nozzle bores, flange gasket sealing surfaces, carbon steel internals, and stainless steel internals, unless otherwise specified.

3. For coatings subject to immersion, obtain full cure for completed system. Consult coatings manufacturer's written instructions for these requirements. Do not immerse coating until completion of curing cycle.
4. Apply coatings in accordance with these Specifications and paint manufacturers' printed recommendations and special details. The more stringent requirements shall apply. Allow sufficient time between coats to assure thorough drying of previously applied paint.
5. Sand wood lightly between coats to achieve required finish.
6. Vacuum clean surfaces free of loose particles. Use tack cloth just prior to applying next coat.
7. Fusion Bonded Coatings Method Application: Electrostatic, fluidized bed, or flocking.
8. Coat units or surfaces to be bolted together or joined closely to structures or to one another prior to assembly or installation.
9. Water-Resistant Gypsum Board: Use only solvent type paints and coatings.
10. On pipelines, terminate coatings along pipe runs to 1 inch inside pipe penetrations.
11. Keep paint materials sealed when not in use.
12. Where more than one coat is applied within a given system, alternate colors to provide a visual reference showing required number of coats have been applied.

B. Galvanized Metal, Copper, and Nonferrous Metal Alloys:

1. Concealed galvanized, copper, and nonferrous metal alloy surfaces (behind building panels or walls) do not require painting, unless specifically indicated herein.
2. Prepare surface and apply primer in accordance with System No. 10 specification.
3. Apply intermediate and finish coats of the coating system appropriate for the exposure.

C. Porous Surfaces, Such As Concrete and Masonry:

1. Surfacer/Filler: Apply surfacer/filler to concrete with methods recommended by the coating manufacturer as required to provide a surface that is continuous, smooth, void-free surface. Force material into voids and irregularities, remove excess filler before the material sets.
2. Spray or trowel apply coating system components in accordance with manufacturer's written instructions.
3. Cove corners at vertical and horizontal intersections as recommended by the coating manufacturer.
4. Lightly backroll finish coat as recommended by the manufacturer to eliminate pinholes.

5. Provide minimum number of coats required for each coating system, regardless of application method. Do not apply succeeding coats until previous coat has dried in accordance with coating manufacturer's recommendations.
6. Observe manufacturers published recoat windows. If recoat window is exceeded, mechanically abrade before recoating in accordance with manufacturer's directions and as approved by Owner and/or Engineer.
7. Priming and Holiday Prevention on Concrete and Substrates: Follow manufacturer's written instructions related to application during decreasing substrate temperature conditions, adequate surface preparation and other application techniques that may be necessary to reduce the potential for outgassing and formation of pinholes during coating application and cure. If required by the coating manufacturer, apply manufacturer's recommended epoxy penetrating primer to minimize the effects of vapor transmission from the concrete.

D. Stripe Coating:

1. Stripe coat all field welds, edges, angles, fasteners, and other irregular surfaces in immersion service.
2. Stripe coat shall consist of one coat, brush applied, to the coating thickness specified.
3. Apply stripe coat between intermediate and final coats.
4. Stripe coat color shall contrast intermediate coat to allow visual verification of application.

E. Film Thickness and Coverage:

1. Number of Coats:
 - a. Minimum required without regard to coating thickness.
 - b. Additional coats may be required to obtain minimum required paint thickness, depending on method of application, differences in manufacturers' products, and atmospheric conditions.
2. Application Thickness:
 - a. Do not exceed coating manufacturer's recommendations.
 - b. Measure using a wet film thickness gauge to ensure proper coating thickness during application.
3. Film Thickness Measurements and Electrical Inspection of Coated Surfaces:
 - a. Perform with properly calibrated instruments.
 - b. Recoat and repair as necessary for compliance with specification.
 - c. Coats are subject to inspection by Engineer and coating manufacturer's representative.
4. Visually inspect concrete, masonry, nonferrous metal, plastic, and wood surfaces to ensure proper and complete coverage has been attained.

5. Give particular attention to edges, angles, flanges, and other similar areas, where insufficient film thicknesses are likely to be present, and ensure proper millage in these areas.
6. Apply additional coats as required to achieve complete hiding of underlying coats. Hiding shall be so complete that additional coats would not increase the hiding.

3.07 PROTECTIVE COATINGS SYSTEMS AND APPLICATION SCHEDULE

- A. Unless otherwise shown or specified, paint surfaces in accordance with the following application schedule. In the event of discrepancies or omissions in the following, request clarification from Engineer before starting work in question.
- B. Additional requirements are included in the Drawings and in the Piping Schedule.
- C. System No. 1 Submerged Metal:

Surface Prep.	Paint Material	Min. Coats, Cover
SP 5, White Metal Blast Cleaning	NSF Epoxy	3 coats, 4 MDFTPC Stripe coat (4 MDFT), between second and third coats, all edges, welds, and irregular surfaces

1. Use on the following items or areas:
 - a. Metal surfaces new below a plane 1 foot above the maximum liquid surface; metal surfaces above the maximum liquid surface that are a part of the immersed equipment; surfaces of metallic items, such as wall pipes, pipes, pipe sleeves, access manholes, gate guides and thimbles, and structural steel that are embedded in concrete; and the following specific surfaces:
 - 1) Interior surfaces of steel piping noted in the Piping Schedule.
 - 2) Exterior surfaces of immersed pipe.
 - 3) Interior surfaces of pumps.
 - 4) Vertical turbine pumps including the interior surfaces of discharge head, interior and exterior surfaces of column pipe, bottom of sole plate and exterior surfaces of suction bell and bowl assembly.
 - 5) Gravity thickener mechanisms.

D. System No. 3 Coating Under Insulation:

Surface Prep.	Paint Material	Min. Coats, Cover
SP 5, White Metal Blast Cleaning	Epoxy Novolac Phenolic	2 coats, 10 MDFT

1. Use on the following items or areas:
 - a. Insulated piping in humid environments including the washdown area, chemical storage area, chemical treatment area, flocculation and sedimentation areas.

E. System No. 4 Exposed Metal—Highly Corrosive:

Surface Prep.	Paint Material	Min. Coats, Cover
Steel: SP 10, Near-White Blast Cleaning	Epoxy Primer—Ferrous Metal	1 coat, 2.5 MDFT
Ductile Iron: NAPF 500-03-04.	High Build Epoxy	1 coat, 4 MDFT
	Polyurethane Enamel	1 coat, 3 MDFT

1. Use on the following items or areas:
 - a. Exposed metal surfaces, new located inside or outside of structures and exposed to weather and the following specific surfaces:
 - 1) As noted in the Pipe Schedule.
 - 2) As noted in Architectural Schedules on Drawings.
 - 3) Steel structural framing for buildings and equipment.
 - 4) Exposed ferrous metal inside chemical storage, chemical treatment, and flocculation and sedimentation buildings not otherwise specified to receive a different coating system.
 - 5) Exterior surfaces of the vertical turbine pump discharge head and motor.

F. System No. 5 Exposed Metal—Mildly Corrosive:

Surface Prep.	Paint Material	Min. Coats, Cover
SP 10, Near-White Blast Cleaning Ductile Iron: NAPF 500-03-04.	Epoxy Primer— Ferrous Metal	1 coat, 2.5 MDFT
	Polyurethane Enamel	1 coat, 3 MDFT

1. Use on the following items or areas:
 - a. Exposed metal surfaces, new located inside or outside of structures and exposed to weather or in a highly humid atmosphere and the following specific surfaces:
 - 1) As indicated in the Architectural Schedules on Drawings.
 - 2) As indicated in the Pipe Schedule.
 - 3) In the event no coating system is specified for indoor/outdoor exposed steel, ductile iron, or cast iron, this coating shall be used as the default and applied to those exposed surfaces.

G. System No. 7 Concrete Encased Metal:

Surface Prep.	Paint Material	Min. Coats, Cover
Steel: SP 6, Commercial Blast Cleaning. Ductile Iron: NAPF 500-03-04.	High Build Epoxy OR Coal Tar Epoxy	2 coats, 16 mils MDFT

1. Use on the following items or areas:
 - a. Use on concrete encased carbon steel, ductile iron, and cast iron including wall pipes, pipe sleeves, and the following specific surfaces:

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- 1) Buried concrete encased pipes and fittings in areas not specifically called out here, except stainless steel (do not paint concrete encased stainless steel pipes).
- 2) Concrete encased piping under gravity thickener.
- 3) Concrete encased piping under flocculation and sedimentation basins.

H. System No. 8 Buried Metal—General:

Surface Prep.	Paint Material	Min. Coats, Cover
SP 10, Near-White Blast Cleaning	High Build Epoxy OR Coal Tar Epoxy	2 coats, 16 MDFT

1. For steel pipe and fittings, follow AWWA C209 and AWWA C214.
2. Use on the following items or areas:
 - a. Buried, belowgrade portions of ferrous metal items, except buried stainless steel. Use System No. 10 for buried stainless steel and finish coat with this or other systems as required for exposure.

I. System No. 10 Galvanized Metal, Copper, and Nonferrous Metal Alloy Conditioning:

Surface Prep.	Paint Material	Min. Coats, Cover
In accordance with Paragraph Galvanized Metal, Copper, and Nonferrous Metal Alloy Surface Preparation	Epoxy Primer—Other	As recommended by coating manufacturer. Remaining coats as required for exposure

1. Use on the following items or areas:
 - a. Galvanized and stainless-steel surfaces requiring painting and the following specific surfaces:
 - 1) Nuts, bolts, anchor bolts, and washers.
 - b. Exposed nonferrous metal inside chemical storage, chemical treatment, and flocculation and sedimentation buildings including aluminum ductwork, railings, gratings, and stairs.
 - c. After application of System No. 10, apply finish coats as required for exposure.

J. System No. 11 Faying Surfaces of Slip Critical Bolted Connections:

Surface Prep.	Paint Material	Min. Coats, Cover
SP 10, Near-White Blast Cleaning	Organic Zinc Rich Primer	1 coat, 3 MDFT

1. Use on faying surfaces of slip critical joints as specified and as shown on Drawings and as indicated in Section 05 12 00, Structural Steel Framing.
2. Provide primer in accordance with RCSC Specification for Structural Joints using High-Strength Bolts.

K. System No. 21 Skid-Resistant—Concrete:

Surface Prep.	Paint Material	Min. Coats, Cover
In accordance with Paragraph Concrete Surface Preparation	Epoxy Nonskid (Aggregated)	1 coat, 160 SFPG

1. Use on the following items or areas:
 - a. Concrete floors and secondary containment area for the polymer storage, pump, and tote areas as indicated on Drawings.
 - b. Where shown in the Architectural Schedules on the Drawings.

L. System No. 25 Exposed FRP, PVC:

Surface Prep.	Paint Material	Min. Coats, Cover
In accordance with Paragraph Plastic and FRP Surface Preparation	Acrylic Latex	2 coats, 320 SFPGPC

1. Use on the following items or areas:
 - a. All exposed-to-view PVC and CPVC surfaces, and FRP surfaces without integral UV-resistant gel coat.

M. System No. 27 Aluminum and Dissimilar Metal Insulation:

<u>Surface Prep.</u>	<u>Paint Material</u>	<u>Min. Coats, Cover</u>
<u>Solvent Clean (SP 1)</u>	<u>Prime in accordance with manufacturer's recommendations</u>	
	<u>Bituminous Paint</u>	<u>1 coat, 10 MDFT</u>

a.1. Use on aluminum surfaces embedded or in contact with concrete.

3.08 ARCHITECTURAL PAINT SYSTEMS AND APPLICATION SCHEDULE

A. Unless otherwise shown or specified, paint surfaces in accordance with the following application schedule. In the event of discrepancies or omissions in the following, request clarification from Engineer before starting work in question.

B. System No. 101 Wood, Stained (Interior or Exterior):

Surface Prep.	Paint Material	Min. Coats, Cover
In accordance with Paragraph Wood Surface Preparation	Wood Stain Semi-Transparent	2 coats, 250 SFPGPC

1. Use on the following items or areas:
 - a. As indicated on Architectural Schedules on Drawings.

C. System No. 103 Wood, Flat (Interior or Exterior):

Surface Prep.	Paint Material	Min. Coats, Cover
In accordance with Paragraph Wood Surface Preparation	Alkyd Wood Primer	1 coat, 400 SFPG
	Acrylic Latex (Flat)	2 coats, 350 SFPGPC

1. Use on the following items or areas:
 - a. As indicated on Architectural Schedules on Drawings.

D. System No. 104 Wood, Natural (Interior or Exterior):

Surface Prep.	Paint Material	Min. Coats, Cover
In accordance with Paragraph Wood Surface Preparation	Sanding Sealer	1 coat, 450 SFPG
	Varnish Satin	2 coats, 450 SFPG

1. Use on the following items or areas:
 - a. As indicated on Architectural Schedules on Drawings.

E. System No. 105 Wood, Stained and Varnished (Interior or Exterior):

Surface Prep.	Paint Material	Min. Coats, Cover
In accordance with Paragraph Wood Surface Preparation	Stain, Wood	Match Sample
	Sanding Sealer	1 coat, 450 SFPG
	Varnish Satin),	2 coats, 450 SFPGPC

1. Use on the following items or areas:
 - a. As indicated on Architectural Schedules on Drawings.

F. System No. 106 Galvanized Metal:

Surface Prep.	Paint Material	Min. Coats, Cover
In accordance with Paragraph Galvanized Metal, Copper, and Nonferrous Metal Alloy Surface Preparation	Manufacturer's Recommended Primer	1 coat, as recommended by manufacturer
	Alkyd Enamel (Semigloss)	2 coats, 4 MDFT

1. Use on the following items or areas:
 - a. As indicated on Architectural Schedules on Drawings.

G. System No. 107 Metal Trim and Structural Steel:

Surface Prep.	Paint Material	Min. Coats, Cover
SP 6, Commercial Blast Cleaning	Rust-Inhibitive Primer	1 coat, 2 MDFT
	Alkyd Enamel (Semigloss)	2 coats, 4 MDFT

1. Use on the following items or areas:
 - a. As indicated on Architectural Schedules on Drawings.

H. System No. 109 Masonry, Semigloss:

Surface Prep.	Paint Material	Min. Coats, Cover
In accordance with Paragraph Masonry Surface Preparation	Block Filler	1 coat, 75 SFPG
	Acrylic Latex (Semigloss)	2 coats, 240 SFPGPC

1. Use on the following items or areas:
 - a. As indicated on Architectural Schedules on Drawings.

I. System No. 115 Gypsum Board, Satin (unless scheduled otherwise):

Surface Prep.	Paint Material	Min. Coats, Cover
In accordance with Paragraph Gypsum Board Surface Preparation	Latex Primer/Sealer	1 coat, 350 SFPG
	Acrylic Latex (Satin) or Alkyd (Satin)	2 coats, 400 SFPGPC

1. Use on the following items or areas:
 - a. As indicated on Architectural Schedules on Drawings.

J. System No. 116 Gypsum Board, Semigloss Epoxy:

Surface Prep.	Paint Material	Min. Coats, Cover
In accordance with Paragraph Gypsum Board Surface Preparation	Manufacturer's Recommended Primer	1 coat, 350 SFPG
	Water Base Epoxy (Semigloss)	1 coat, 250 SFPG

1. Use on the following items or areas:
 - a. As indicated on Architectural Schedules on Drawings.

K. System No. 117 Concrete Masonry, Gloss Epoxy:

Surface Prep.	Paint Material	Min. Coats, Cover
In accordance with Paragraph Masonry Surface Preparation	Block Filler	1 coat, 75 SFPG
	Water Base Epoxy (Gloss)	2 coats, 300 SFPGPC

1. Use on the following items or areas:
 - a. As indicated on Architectural Schedules on Drawings.

3.09 COLORS

- A. Provide as indicated on Architectural Schedules, designated herein, shown for equipment and appurtenances and designated herein, and shown in Piping Schedule.
- B. Proprietary identification of colors is for identification only. Selected manufacturer may supply matches.
- C. Equipment Colors:
 1. Equipment includes the machinery or vessel itself plus the structural supports and fasteners and attached electrical conduits. Paint equipment and piping one color as selected on Drawings.
 2. Paint non-submerged portions of equipment the same color as the piping it serves, except as itemized below:
 - a. Dangerous Parts of Equipment and Machinery: OSHA Orange.
 - b. Fire Protection Equipment and Apparatus: OSHA Red.

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- c. Radiation Hazards: OSHA Purple.
- d. Physical hazards in normal operating area and energy lockout devices, including, but not limited to, electrical disconnects for equipment and equipment isolation valves in air and liquid lines under pressure: OSHA Yellow.

D. Pipe Identification Painting:

- 1. Color code nonsubmerged metal piping, except electrical conduit. Paint fittings and valves the same color as pipe, except equipment isolation valves.
- 2. Pipe Color Coding: In accordance with Piping Schedule. Applies to finish coat (top coat) only for above grade piping and submerged piping.
- 3. On exposed stainless steel piping, apply color 24 inches in length along pipe axis at connections to equipment, valves, or branch fittings, at wall boundaries, and at intervals along piping not greater than 9 feet on center.
- 4. Pipe Supports: Painted light gray, as approved by Engineer.
- 5. Fiberglass reinforced plastic (FRP) pipe, polyvinylidene fluoride (PVDF), and polyvinyl chloride (PVC) pipe located inside of buildings and enclosed structures will not require painting, except as noted or scheduled.
- 6. Galvanized electrical conduit shall not be painted unless noted otherwise in the Drawings.

3.10 FIELD QUALITY CONTROL

A. Testing Equipment:

- 1. Provide calibrated electronic type dry film thickness gauge to test coating thickness specified in mils.
- 2. Provide low-voltage wet sponge electrical holiday detector to test completed coating systems, 20 mils dry film thickness or less, except zinc primer, high-build elastomeric coatings, and galvanizing, for pinholes, holidays, and discontinuities, as manufactured by Tinker and Rasor, San Gabriel, CA, Model M-1.
- 3. Provide high-voltage spark tester to test completed coating systems in excess of 20 mils dry film thickness. Unit as recommended by coating manufacturer.

B. Testing:

- 1. Thickness and Continuity Testing on Metal:
 - a. Measure coating thickness specified in mils with a magnetic type, dry film thickness gauge, in accordance with SSPC PA 2. Check

- each coat for correct millage. Do not make measurement before a minimum of 8 hours after application of coating.
- b. Holiday detect coatings 20 mils thick or less, except zinc primer and galvanizing, with low voltage wet sponge electrical holiday detector in accordance with NACE SP0188.
 - c. Holiday detect coatings in excess of 20 mils dry with high voltage spark tester as recommended by coating manufacturer and in accordance with NACE SP0188.
 - d. After repaired and recoated areas have dried sufficiently, retest each repaired area. Final tests may also be conducted by Owner.
2. Thickness Testing of Concrete:
 - a. Perform destructive dry film thickness measurements on concrete in accordance with ASTM D4138.
 - b. Perform one film thickness measurement per 500 square feet of lined surface.
 - c. Perform additional testing if any one measurement does not meet specified thickness requirement.
 - 1) Perform an additional four measurements in the area where inadequate thickness is found. No single measurement shall be less than specified dry film thickness.
 - d. Provide additional coats of lining as required to meet specified film thickness. Abrade surface by brush blasting if manufacturers recommended recoat window is exceeded.

C. Holiday Testing:

1. Holiday detect coatings subject to immersion service on 100 percent of the surfaces.
 - a. Thin Film Coatings:
 - 1) Holiday detect coatings 20 mils thick or less, except zinc primer and galvanizing, with low voltage wet sponge electrical holiday detector in accordance with NACE SP0188.
 - 2) Equipment: Tinker and Razor Model M-1, TQC Low-Voltage Pinhole Detector.
 - b. Thick Film Coatings:
 - 1) Holiday detect coatings in excess of 20 mils dry film thickness with high voltage spark tester as recommended by coating manufacturer and in accordance with NACE SP0188.
 - 2) Equipment: As recommended by the coating manufacturer.
2. Coatings with pinholes/holidays are subject to rejection and require repair/recoat.

- D. Inspection: Leave staging and lighting in place until Engineer has inspected surface or coating. Replace staging removed prior to approval by Engineer. Provide additional staging and lighting as requested by Engineer.
- E. Unsatisfactory Application:
 - 1. If item has an improper finish color or insufficient film thickness, clean surface and topcoat with specified paint material to obtain specified color and coverage. Obtain specific surface preparation information from coating manufacturer.
 - 2. Evidence of runs, bridges, shiners, laps, or other imperfections is cause for rejection.
 - 3. Repair defects in accordance with written recommendations of coating manufacturer.
- F. Damaged Coatings, Pinholes, and Holidays:
 - 1. Hand or power sand visible areas of chipped, peeled, or abraded paint, and feather edges. Follow with primer and finish coat. Depending on extent of repair and appearance, a finish sanding and topcoat may be required.
 - 2. Remove rust and contaminants from metal surface. Provide surface cleanliness and profile in accordance with surface preparation requirements for specified paint system.
 - 3. Feather edges and repair in accordance with recommendations of paint manufacturer.
 - 4. Apply finish coats, including touchup and damage-repair coats in a manner that will present a uniform texture and color-matched appearance.

3.11 MANUFACTURER'S SERVICES

- A. In accordance with Section 01 43 33, Manufacturers' Field Services, coating manufacturer's representative shall be present at Site as follows:
 - 1. On first day of application of any coating system.
 - 2. A minimum of two additional Site inspection visits, each for a minimum of 4 hours, in order to provide Manufacturer's Certificate of Proper Installation.
 - 3. As required to resolve field problems attributable to or associated with manufacturer's product.
 - 4. To verify full cure of coating prior to coated surfaces being placed into immersion service.

3.12 CLEANUP

- A. Place cloths and waste that might constitute a fire hazard in closed metal containers or destroy at end of each day.
- B. Upon completion of the Work, remove staging, scaffolding, and containers from Site or destroy in a legal manner.
- C. Remove paint spots, oil, or stains upon adjacent surfaces and floors and leave entire job clean.

3.13 SUPPLEMENTS

- A. The supplements listed below, following “End of Section,” are a part of this specification:
 - 1. Paint System Data Sheet (PSDS).
 - 2. Paint Product Data Sheet (PPDS).

END OF SECTION

PAINT SYSTEM DATA SHEET

Complete this PSDS for each coating system, include all components of the system (surface preparation, primer, intermediate coats, and finish coats). Include all components of a given coating system on a single PSDS.

Paint System Number (from Spec.):		
Paint System Title (from Spec.):		
Coating Supplier:		
Representative:		
Surface Preparation:		
Paint Material (Generic)	Product Name/Number (Proprietary)	Min. Coats, Coverage

PAINT PRODUCT DATA SHEET

Complete and attach manufacturer’s Technical Data Sheet to this PPDS for each product submitted. Provide manufacturer’s recommendations for the following parameters at temperature (F)/relative humidity:

Temperature/RH	50/50	70/30	90/25
Induction Time			
Pot Life			
Shelf Life			
Drying Time			
Curing Time			
Min. Recoat Time			
Max. Recoat Time			

Provide manufacturer’s recommendations for the following:

Mixing Ratio: _____

Maximum Permissible Thinning: _____

Ambient Temperature Limitations: min.:_____ max.:_____

Surface Temperature Limitations: min.:_____ max.:_____

Surface Profile Requirements: min.:_____ max.:_____