

PART 1 - GENERAL

1-1 SECTION INCLUDES

- A. Painting of the various components of the project.

1-2 SUBMITTALS

- A. Submit in accordance with Section 01330: Submittals.
- B. Product Data: Submit Manufacturer's technical information including paint label analysis and application instructions for each material proposed for use.
- C. Samples
1. If the selected Manufacturer is other than the Manufacturer designated in the Coating and Color Schedules, submit a list of products comparable to those specified; submit a comparable Color Schedule and samples of each color and finish specified.
 2. Submit samples of the selected manufacturer's complete range of colors for the preparation of the Color Schedule.
 3. If a specified color is not a standard of the selected Manufacturer, mix the exact color to match and show the formulation on the label.
 4. Where tinting of successive coats is required, provide samples of each tint for field comparison.
 5. On actual surfaces in the field, duplicate approved samples showing specified color, sheen or texture. Simulate finished lighting conditions for review of in-place Work; for wall and ceiling areas, paint 100 sq ft; on doors or trim and other smaller areas, paint one complete unit.

1-3 QUALITY ASSURANCE

A. General

1. The quality of workmanship shall be "Type 1 - Recommended," as set forth in the latest edition of the Painting Specifications of the Painting and Decorating Contractors of America.
2. Surface preparation, priming and coats of paint specified are in addition to shop-priming and surface treatment specified under other Sections of the Work.

1-4 DELIVERY, STORAGE AND HANDLING

- A. Deliver paint in original unopened containers labeled with the following information:
1. Color and name of material.
 2. Manufacturer's name.
 3. Manufacturer's stock number.
 4. Contents by volume for major pigment and vehicle constituents.
 5. Date of manufacture.

6. Thinning instructions.
 7. Surface preparation instructions.
 8. Application instructions and spreading rate.
- B. Maintain containers used in storage, mixing, and application of paint in a clean condition, free of foreign materials and residue.
- C. Keep containers tightly closed.
- D. Remove waste materials, empty cans, and oily rags from the building at the end of each day.

1-5 DEFINITIONS

- A. "Surface" means all faces and edges of a product or item of equipment.
- B. "Paint" as used herein means all coating materials including fillers, sealers, primers, undercoating and finish coats of emulsions, enamels, stains, epoxies, and varnishes.
- C. "Coat" means one complete application of "paint" over an entire surface. It does not include sanding, cleaning or other preparatory operation.
- D. "Paint System" means the total preparation, coating and finish on a given surface.
- E. "MDFT" means mils of dry film thickness.
- F. "Applicator" mean person(s) or firm actually performing painting preparation and painting work.
- G. "Lining System" means coating system to be applied to existing and new concrete to prevent corrosion.

1-6 JOB CONDITIONS

- A. Temperature and Humidity: Apply water-base paints in ambient temperatures of 50-90 deg F. Apply solvent-thinned paints in ambient temperatures of 45-95 deg F. Do not apply paint in snow, rain, fog or mist or when the relative humidity exceeds 85% or to damp or wet surfaces.

1-7 SPECIAL PRECAUTIONS

- A. Perform Work in strict accordance with the best established safety practices and material Manufacturer's recommendations. Do not allow high heat near paint.
- B. Coating materials which may create a toxic, explosive or other hazardous condition shall be used only in strict accordance with manufacturer's specifications and recommendations to ensure safe working conditions. Provide adequate ventilation and enforce strict "No Smoking" regulations while these coatings are being applied.

PART 2 - PRODUCTS

2-1 GENERAL - DESCRIPTION OF WORK

- A. Work of this Section includes, but is not limited to:
1. Architectural and process coatings.
 2. Shop applied primer requirements.

3. Surface preparation.
- B. Surfaces Included:
1. Prepare and paint all exterior exposed surfaces throughout the Project, except those specifically excluded.
 2. Prepare and paint all interior exposed surfaces throughout the Project, except those specifically excluded.
 3. Work includes field painting of exposed pipes and covered pipes and ducts (including color coding), and of hangers, exposed steel and iron Work, and primed metal surfaces of equipment installed under Civil, Architectural, Structural, Process, Mechanical, and Electrical Work, except as otherwise indicated.
 4. For aluminum surfaces in contact concrete or any other metal except galvanized ferrous metal, solvent clean and paint aluminum with one coat of a high build polyamide epoxy, Tnemec P66, MDFT 8 mils or equal.
 5. All gratings (internal and external), structural members used for grating supports, stairways, and handrails shall be shop coated and field repaired as necessary.
 6. Coat all exposed reinforcement that will be permanently exposed following demolition and saw cutting existing concrete structures.
- C. Surfaces Excluded: In general, do not paint the following surfaces unless specifically noted to be painted in the Drawings or other Contract Documents:
1. Utility tunnels, pipe spaces, duct shafts.
 2. Moving parts of operating units, such as valve and damper operators, linkages, sensing devices, and shafts; do not paint code-required labels, such as Underwriters' Laboratories and Factory Mutual or equipment identification, performance rating, name and nomenclature plates.
 3. Surfaces where the natural finish is obviously intended not to be painted, such as stainless steel.
- D. Coating Schedule:
1. The Coating Schedule at the end of this section includes the minimum number of coats and type of paint for each surface.
 2. Where surfaces are not specifically mentioned, paint these with the same material and same color as adjacent or similar surfaces.
 3. Proprietary paint names used in schedules are not intended to imply that products of the named manufacturers are required to the exclusion of equivalent products of other manufacturers listed.
 4. Proprietary concrete coating names used in schedules are intended for the products to be used.

2-2 MANUFACTURERS AND TYPES

- A. General: Do not use more than one manufacturer's products within a paint system, or intermix or thin one product line with another. Acceptable manufacturers are as follows:
- B. Concrete Lining Coating

1. Raven Lining Systems
- C. Paint
1. Tnemec
 2. Devoe Coatings
 3. PPG Industries
 4. Sherwin-Williams Co.
 5. Carboline

2-3 COLORS

A. Architectural and Process Coatings

1. Some colors may be indicated in the Contract Documents. Colors not indicated will be issued during the construction period. Contractor shall be responsible to coordinate with COR, to provide paint samples to COR and to finalize paint color with COR.
2. The basic color scheme will be standard light or pastel shades except where necessary to match existing colors.

2-4 MATERIAL PREPARATION

- A. General: Mix and prepare painting materials in strict accordance with Manufacturer's directions.
1. Stir all materials to a uniform density, and as required during application; do not stir surface film into the material. Remove the film and, if necessary, strain before using.
- B. Tinting: Tint each undercoat a lighter shade of the same color to facilitate identification of coats. Identify each coat on container.

PART 3 - EXECUTION

3-1 INSPECTION

- A. Contractor shall be responsible to coordinate and have applicator examine areas and conditions under which painting work is to be applied and notify Contractor and COR in writing of conditions detrimental to proper and timely completion of Work. Contractor shall not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to Applicator. Contractor shall not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to the formation of a durable paint film and first class appearance.

3-2 SHOP APPLIED PRIMER REQUIREMENTS

A. General

1. Upon request from other trades, furnish information on characteristics of specified paint system for proper selection of primer.
2. Inspect shop primed surfaces and determine if primer is compatible with the paint system specified; prepare surfaces and reprime as specified unless specified product is

incompatible with shop primer; in such cases determine the proper barrier coat to use in lieu of primer listed in the Paint Schedule.

B. Shop Primer Schedule

1. Metal Primer Paint for Opaque Finishes
 - a. Shop primer is not Work of this Section
 - b. Unless otherwise indicated, this Shop Primer Schedule paragraph defines the requirements for Work of other Sections requiring shop primer.
2. General
 - c. Steel
 - 1) Interior steel not receiving top coat
 - a) Surface preparation: SSPC-SP1 then SP3
 - b) Product/Manufacturer
 - (1) Tnemec 10-1009 gray rust inhibitive primer 2.5 to 3.5 MDFT
 - 2) Interior steel receiving alkyd or latex top coat
 - a) Surface preparation: SSPC-SP1 then SP3
 - b) Product/Manufacturer
 - (2) Tnemec 4-56 gray rust inhibitive primer 2.5 to 3.5 MDFT
 - 3) Exterior steel receiving alkyd or latex top coat
 - a) Surface preparation: SSPC-SP6
 - b) Product/Manufacturer
 - (3) Tnemec 4-56 gray rust inhibitive primer 2.5 to 3.5 MDFT
 - b. Interior or exterior steel receiving epoxy top coat
 - 1) Surface preparation: SSPC-SP6
 - 2) Product/Manufacturer
 - a) Tnemec 66-1211 Epoxoline Primer 3 to 5 MDFT
 - c. Galvanized steel: Zinc dust, zinc oxide (FS TT-P-641, Type II)

3-3 SURFACE PREPARATION

A. General

1. Mask or otherwise protect or remove all hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items not to be painted; reinstall the removed items by workers skilled in the trades involved.
2. Properly prepare each surface to receive paint. Perform preparation and cleaning procedures in accordance with coating manufacturer's instructions and as herein specified, for each particular substrate condition; comply with most stringent requirements.
3. Remove oil and grease prior to mechanical cleaning; program the cleaning and painting so that contaminants from the cleaning process will not fall onto wet, newly-painted surfaces.

B. Cementitious Materials Surface Preparation

1. Prepare all cementitious surfaces of concrete, to be coated by removing old coatings, loose concrete debris, scaling, dirt, grease, oils in order to get concrete surface to solid surface. Surfaces include all walls, ceilings, horizontal surfaces and pipe channels.
2. Determine alkalinity and moisture content of surfaces to be painted by performing appropriate tests. If surfaces are found to be sufficiently alkaline to cause blistering and burning of finish coating, correct this condition before application of coating. Do not apply coating over surfaces where moisture content exceeds that permitted in manufacturer's printed directions.

C. Nongalvanized Ferrous Metal Surface Preparation

1. General: Prepare the surface in accordance with the coating Manufacturer's recommendations and as herein specified, for the type of surface coated, the condition of the surface, and the environmental conditions under which the coated surface must serve; comply with most stringent requirements.
2. Interior Steel Not Receiving Top Coat: SSPC-SP1 then SP3
3. Interior Steel Receiving Alkyd or Latex Top Coat: SSPC-SP1 then SP3
4. Exterior Steel Receiving Alkyd or Latex Top Coat: SSPC-SP6
5. Interior or Exterior Steel Receiving Epoxy Top Coat: SSPC-SP6

D. Galvanized and Nonferrous Metals Surface Preparation

1. General: Prepare the surface in accordance with the coating Manufacturer's recommendations and as herein specified, for the type of surface coated, the condition of the surface, and the environmental conditions under which the coated surface must serve; comply with most stringent requirements.
2. Pretreat with priority nonpetroleum based solvent.

E. Aluminum Surface Preparation

1. Aluminum surfaces shall be solvent cleaned.

3-4 APPLICATION

A. General

1. Use applicators and techniques best suited for the type of material being applied.
 - a. Final coat of paint on all walls shall be rolled unless approved otherwise.
2. Paint surfaces behind movable equipment the same as similar exposed surfaces; paint surfaces behind permanently-fixed equipment with prime coat only.
3. Sand lightly between each succeeding enamel or varnish coat.
4. Allow sufficient time between successive coatings to permit proper drying; do not recoat until paint has dried and will not cause loss of adhesion of the undercoat.

B. Minimum Coating Thickness

1. Apply each material at not less than manufacturer's recommended spreading rate.

2. Contractor shall provide COR proof of compliance acceptable to COR for MDFT on all surfaces.

C. Appearance

1. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, orange peel, ropiness and other imperfections shall not be acceptable. All imperfections shall be repaired per the manufacture's recommendations.
2. For opaque finishes, completely cover to provide a smooth surface of uniform finish, color and coverage.
3. For transparent finishes, use multiple coats as required to produce glass-smooth surface film of even luster.
4. Apply additional coats when undercoats, stains or other conditions show through the final coat of paint, until the paint film is of uniform finish, color and appearance.

3-5 CLEANUP AND PROTECTION

- A. Use clean drop cloths for protection of adjacent surfaces and floors.
- B. Upon completion of painting Work, clean all paint spattered surfaces.
- C. Protect work of other trades, whether to be painted or not, against damage; correct damage by cleaning, repairing or replacing, and repainting, to satisfaction of COR.
- D. Provide "Wet Paint" signs; remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations.
- E. At completion of work of other trades, touch-up and restore all damaged and defaced painted surfaces.

3-6 COATING SCHEDULE FOR NEW SURFACES

- A. General: Surface preparation indicated could vary depending on surface conditions when equipment is ready for painting. Contractor shall notify COR of surface preparation procedures at time of work. Items shall be painted as shown in the following painting schedule. If items to be painted are not fully addressed in this Section 09900, item surface shall be prepared and painted in accordance with the Tnemec coating system selection guide for water and wastewater treatment facilities.
- B. Coating Schedule

The following schedule lists items to be painted. In addition to those items listed, any and all materials that have been factory primed shall receive finish coating in accordance with this section. Also, all painted surfaces that have been damaged prior to acceptance shall be repainted to the manufacturer's original specification.

Coating Schedule

- Treatment Building interior concrete walls
- Treatment Building exterior concrete walls
- Interior structural metal
- Interior metal piping, fittings
- Exposed reinforcement
- Exterior metal

C. PVC Piping:

1. Surf Prep: Scarify
2. Coatings: Epoxy
 - a. Tnemec
 - 1) 2 coats Series 66 or 69 Hi-Build Epoxoline 2-3 MDFT, Total 4-6 MDFT

D. Masonry

1. Coating: Epoxy
 - a. Masonry Walls
 - 1) 1 coat Devran 265 BHF Block Filler, by DeVoe Coatings
 - 2) 2 coats Devran 224HS at 6 mils per coat, by Devoe Coatings

E. Concrete – Exterior Exposed

1. Surface Prep: Clean and Dry
2. Coating: Epoxy
 - b. Concrete
 - 3) Primer and Finish Coat Tnemec Series 52 or 55 8-16 MDFT

F. Concrete – Interior

1. Surface Prep: Clean and Dry
2. Coating: Epoxy
 - a. Concrete
 - 1) Primer and Finish Coat Tnemec Series 66 or 69, 8-12 MDFT

G. Metal, Piping and Equipment Non-Submerged

1. Surf Prep: SSPC-SP 6-63 Commercial Blast Cleaning
2. Coating: Epoxy
 - a. Tnemec
 - 1) 1 coat Series 37-77 Chem-Prime 2-3.5 MDFT
 - 2) 1 coat Series 66 or 69/161 Epoxoline/Fastcure 4-6 MDFT

H. Metal Piping and Equipment Submerged

1. Surf Prep: SSPC-SP10 Near White Blast Cleaning (unless otherwise indicated)
2. Coating: Epoxy
 - a. Tnemec
 - 1) 1 coat Series 20-1255 Pota-Pox 3-5 MDFT
 - 2) 2 coats Series 20-2000 Pota-Pox 4-6 MDFT/coat

I. Galvanized Metal (Interior)

1. Surf Prep: SSPC-SP 1-63 Solvent Cleaning
2. Coating: Epoxy
 - a. Tnemec
 - 1) 2 coats Series 66/161 Epoxoline/Fastcure 4-6 MDFT/coat

J. Galvanized Metal (Exterior)

1. Surf Prep: SSPC-SP 1-53 Solvent Cleaning
2. Coating
 - a. Tnemec
 - 1) 1 coat Series 22 Galv-Gard 2.5 MDFT

K. Mill Coated Pipe (Black)

1. Surf Prep: Remove all foreign matter.
2. Coating: Epoxy
 - a. Tnemec
 - 1) 2 coats Series 66/161 Epoxoline/Fastcure 4-6 MDFT/coat

L. Insulated Pipe

1. Surf Prep: Remove all foreign matter.
2. Coating
 - a. Tnemec
 - 1) 1 coat Series 51-792 Primer Sealer
 - 2) 2 coats Series 6 Tneme-Cryl 2-3 MDFT/coat

M. Electrical Equipment

1. Conduit, pull boxes, supports, panelboards, transformers, miscellaneous exposed electrical equipment
2. Coating
 - a. Tnemec Co., Inc.
 - 1) 1 coat 51-792 Sealer 1-2 dry mils

N. Exterior Architectural Coatings

1. Exterior Ferrous Metals
 - a. Roof vents, stacks, air intakes, hoods, electrical conduit, miscellaneous metal items
 - 1) Alkyd, Gloss
 - a) Tnemec Co., Inc.
 - (1) 1 coat 4-56 Versare 2.5 - 3.5 MDFT
 - (2) 2 coats 2H color Tnemec-Gloss 2-3 dry MDFT/coat
2. Exterior Galvanized Metals
 - a. Miscellaneous metal
 - 1) Alkyd, Gloss
 - a) Tnemec Co., Inc.
 - (1) 1 coat 32-1210 Tneme-Grip 0.3-0.5 mils DFT
 - (2) 2 coats 2H Color Tnemec-Gloss 2-3 MDFT/coat
3. Exterior Wood Surfaces
 - a. Waterborne Acrylic Epoxy
 - 1) Tnemec Co. Inc.
 - a) Primer: Series 151-1051 Elasto-Grip, MDFT 1-2
 - b) Finish Coat: Series 114H.B. Tneme_Tufcoat, MDFT 4-6.
4. Exterior Cast-in-Place Concrete
 - a. Elastomeric breathable system, matt finish
 - 1) Tnemec Co.

- a) 1 coat Series 151 Elastogrip 1-2.5 mils DFT
- b) 2 coats Series 156/157 Envirocrete 4-8 mils DFT/ct

O. Aluminum Coatings

- 1. Aluminum surfaces in contact with concrete or any other metal except galvanized ferrous metal
- 2. Surface Prep: Solvent clean surface
- 3. Coating: Epoxy
 - a) Tnemec Co.
 - 1) 1 coat Tnemec Series P66, MDFT 8 MDFT

PART 4 - MEASUREMENT AND PAYMENT:

4-1 MEASUREMENT

- A. Painting shall not be measured for payment.

4-2 PAYMENT

- A. Compensation to the Contractor for all costs associated with furnishing and placing Painting shall be included in the prices bid in the schedule for items in which painting is required.

END OF SECTION 09900

END OF DIVISION 9