

DIVISION 09 – FINISHES

SECTION 09900

PAINTING

PART 1 – GENERAL

1.01 DESCRIPTION

A. Includes all work to be painted including, but not limited to, interior of tanks, equipment, piping, valves, conduits, and other related items.

B. Related Work Specified Elsewhere:

1. Section 01300: Submittals
2. Division 11: Equipment
3. Division 16: Electrical
4. Pre-finishing or shop priming requirements as specified in various other Sections of these Specifications.

1.02 QUALITY ASSURANCE

A. Applicator Qualifications: Painting applicator shall show evidence of acceptability as a qualified applicator by the manufacturer of products specified herein. Submit such evidence with Submittals as specified herein.

B. Referenced Standards:

1. Steel Structures Painting Council Surface Preparation Specifications:
 - a. SSPC-SP1, Solvent Cleaning.
 - b. SSPC-SP2, Hand Tool Cleaning.
 - c. SSPC-SP6, Commercial Blast Cleaning.
 - d. SSPC-SP7, Brush Blast Cleaning.
 - e. SSPC-SP8, Pickling.
 - f. SSPC-SP10, Near-White Blast Cleaning.

1.03 SUBMITTALS:

A. Samples: Submit sample color chips of standard colors and samples of any intermixes required to match colors indicated.

B. Schedule and Product Data: Submit paint schedule in same format as the paint schedule herein, and indicate which of the selected manufacturer's products are intended for use. Do not perform painting or coating work without Engineer's approval of submitted paint schedule.

C. Certificates: Paint manufacturer's direct factory representative shall certify in writing to the Engineer painting and coating compliance with the following:

1. Factory representative's initial site inspection of conditions pertinent to painting and coating work with Contractor or his authorized painting representative.
2. Factory representative's second site inspection at completion of painting and coating work to check proper application and actual mil thickness compliance with these Specifications.
3. Certification issued to Engineer only following unacceptable painting and coating work being rectified to Engineer's satisfaction.
4. Factory representative shall make his services available to the Engineer for immediate consultation in regard to the painting and coating work, and shall make above stated inspections in the Engineer's presence.

D. Operation and Maintenance Data: Upon approval of painting schedule, submit six copies of a detailed maintenance manual including the following information:

1. Name, address and telephone number of manufacturer and local distributor.
2. Product name, number, and technical data sheet for each type of paint.
3. Detailed procedures for routine maintenance and cleaning.
4. Detailed procedure for light repairs such as dents, scratches and staining.

E. Maintenance Materials: Turn over to the Owner upon completion of the project a full set of pipeline identification stencils.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver paint materials to job site in their original unopened containers with labels intact and legible at time of use.

B. Store approved materials at the job site in a suitable and designated area restricted to storage of paint and coating materials and related equipment.

C. Use all means necessary to ensure safe storage and use of paint and coating materials and the prompt and safe disposal of waste. Store paint and coating products protected from weather when such products may be affected by freezing.

1.05 JOB CONDITIONS

A. Field and Shop Coat Compatibility: To insure satisfactory paint and coating performance, it is a Contract requirement that products applied in the shop and field be mutually compatible.

1. Contractor shall require fabricators and equipment manufacturers to apply shop coats that are compatible with field coats specified herein.
2. Above requirement does not apply to full factory-finished items, that is, items having both primer and final finish coatings, except as specified in the following paragraphs.

B. Painting Factory-Finished Equipment: Equipment, such as motors, pumps and other such items, which when installed become an integral part of a system and which may be delivered fully factory-finished (that is, having finish coatings in addition to the prime coating) shall not require repainting in the field unless specifically noted otherwise, or:

1. Factory finish is unacceptable to the Engineer, that is, not having generic type of paint or proper mil thickness to withstand corrosive atmosphere of wastewater treatment plants or is not compatible with color schedule.
2. Factory finish is damaged.
3. On factory-finished items requiring repainting, first sand existing paint to a dull finish and then repaint in scheduled finish system for the installed location of such factory-finished items.

C. Painting Caulking Compound: Do not apply paint over caulking compound until integral solvents have been released from the compound; usually two weeks for butyl-rubber based caulking and one day for acrylic latex caulking.

D. Color:

1. As selected by the Engineer or noted herein.
2. Paint equipment not furnished with a factory finish, or not finished with an acceptable factory finish, and piping and conduits the same color as adjacent surface.
3. Final work shall match Engineer approved samples. Engineer shall select colors where not indicated or specified with no extra compensation allowed the Contractor for such.

E. Placing Into Service: Do not place painted items into service until paints and coatings are fully cured (dry-hard).

F. Environmental Requirements:

1. Adhere to manufacturer's data on air and surface temperature limits and relative humidity during application and curing of coatings.
2. Do not spray apply paint when wind velocity is above 15 mph.
3. Schedule coating work to avoid dust and airborne contaminants.
4. Apply exterior finishes during daylight hours only.
5. When painting must be done in confined spaces, or because of unfavorable ambient conditions, longer drying times will be necessary.
6. Provide supplementary ventilation such as fans and blowers in confined or enclosed areas to carry off solvents during the evaporation stage.

G. Protection:

1. Protect paint materials before, during and after application, and protect other work and materials with drop cloths or other impervious material.
2. Clean up or otherwise remedy without additional cost, damage by paint and coatings to public or private property.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Paint materials listed in the Paint Schedule are products of Tnemec Company, Inc. Equivalent products of other manufacturers may be used subject to approval.

B. Request for substitution shall include manufacturer's literature for each product giving the name, generic type, descriptive information, solids by volume, recommended dry film thicknesses and a list of five projects where each product has been used and rendered satisfactory service. No request for substitution shall be considered that would decrease film thickness or offer a change in the generic type of coating specified.

2.02 MATERIALS

A. Paints and Coatings – General

1. Acceptable products: Indicated in Schedules at the end of this section.
2. Unless otherwise indicated, provide factory-mixed coatings. When required, mix coatings to correct consistency in accordance with manufacturer's instructions before application. Do not dilute or thin coatings, except as instructed.
3. Do not add additives except as instructed or recommended by coating manufacturer.

4. Supply each coating material in quantity required for this section from a single production run.
5. Colors: To be selected from manufacturer's full range of available coatings.

B. Coating Application Accessories: Specified in this section or in coating manufacturer's application instructions, including but not limited to thinners, sealers, primers, cleaning agents, etching agents, cleaning cloths, sanding materials, and clean-up materials.

PART 3 – EXECUTION

3. SURFACE PREPARATION

A. Ferrous Metal:

1. Shop Primed:
 - a. Immediately before paint application, clean sand, dust, mud, dirt, and other foreign matter from shop coat.
 - b. Touch up damaged or destroyed shop paint.
 - c. Surface preparation of surfaces to be touched up must be as effective as those specified for shop painting.
2. Not Shop Primed and Submerged or Intermittently Submerged in Liquid:
 - a. Grind smooth to a rounded contour sharp edges and welds, and remove weld splatter.
 - b. Except for insides of pipes, sandblast in accordance with SSPC SP-10 or pickle in accordance with SSPC SP-8.
 - c. After sandblasting, remove dust and spent sand from surface by brushing or vacuum cleaning.
 - d. Apply prime coat before surface starts to rust.
 - e. Do not allow sandblasted surface to stand overnight before coating.
3. Not Shop Primed and Non-Submerged:
 - a. Grind smooth to a rounded contour sharp edges and welds, and remove weld splatter.
 - b. Sandblast in accordance with SSPC SP-6.
 - c. After sandblasting, remove dust and spent sand from surface by brushing or vacuum cleaning.
 - d. Apply prime coat before surface starts to rust.
 - e. Do not allow sandblasted surface to stand overnight before coating.

B. Mechanical & Electrical Systems:

1. Clean free of dust, mud, dirt, sand and other foreign matter.

2. Solvent clean or otherwise degrease surfaces; exercise care not to damage surfaces.
3. Do not paint factory painted surfaces of mechanical and electrical components in such systems; does not include galvanized surfaces.
4. Do not paint light fixtures.
5. All conduits shall be finish painted to match color of adjacent surfaces.

3.02 APPLICATION

A. General:

1. Strictly follow paint manufacturer's label instructions for mixing, thinning, proper spreading rate and drying time. In no case shall film thickness be less than manufacturer's recommendations nor shall area coverage per gallon exceed manufacturer's recommendations.
2. If material has thickened or must be diluted for application, the coating shall be built up to the same film thickness achieved with undiluted material. Do not use thinner to extend coverage of the paint.
3. Regardless of the surface, it shall be the painter's responsibility to achieve a protective and decorative finish either by decreasing the coverage rate or by applying additional coats of paint.

B. Method of Application:

1. Workmanship: In general, finished surface regardless of method of paint application shall show no evidence of improper application according to accepted trade practice. Do not use paint rollers having nap exceeding 3/8 inch.
2. Multi-coat Application:
 - a. Succeeding coats of paint shall show visual difference from preceding coats. Each coat shall have a uniform appearance and be tinted to the final coat. The final coat shall present solid hiding with edges of paint adjoining other paint or materials made clean with and sharp without overlap. Wipe or otherwise render undercoats dust free just prior to application of succeeding coatings.
 - b. Do not apply additional coats of paint until the film to be recoated is sufficiently cured to receive the next coat.
 - c. If the time limit is exceeded for coatings that have a maximum recoat time, consult paint manufacturer before proceeding with next coat.

C. Painting Exposed/Concealed Surfaces:

1. It is a requirement of this specification that all interior surfaces be painted except as specified herein and elsewhere in the Specifications.
2. Paint exterior surfaces only as scheduled.
3. In interior exposed areas of structures, paint mechanical and electrical systems, including pipe, duct and conduit systems, except for full factory finished items as defined previously.
4. In interior concealed areas no painting is required including mechanical and electrical systems therein, except that pipe identification is required on piping in concealed but accessible areas.
5. Paint above stated exposed mechanical and electrical systems the same color as adjacent wall and/or ceiling color. Paint materials as scheduled herein.
6. Do not paint exposed aluminum surfaces.

D. Pipe Line Identification:

1. Pipe Color: Paint exposed raw water piping, valves and insulation as directed by the Owner.

3.03 CLEANING

A. Upon completion of work, remove paint and coating spots, oil and grease stains from floors, walls, fixtures, hardware and equipment, leaving their finishes in a satisfactory condition. Remove materials and debris from the site of work, and leave in a clean condition so far as this work is concerned.

B. Keep site free from accumulation of paint containers, solvents, thinner, and used cleaning cloths, and legally dispose of same off premises daily.

3.04 PAINT SCHEDULE

A. General: The paint systems are specified by their application type. The acceptable Tnemec coating systems are included to serve as a standard of quality for comparison. If an alternative paint system is offered, it must meet the same level quality including such items as mil thickness, solids content, VOCs, etc. The following paint systems are intended to include all items to be painted at the job site. Any item not specifically named herein but obviously required to be painted, shall be painted in accordance with the system selected by the Engineer, or otherwise painted as directed by the Engineer.

*** END OF SECTION ***