

SECTION 122 – PAINTING

1. SCOPE OF WORK

The work in this section covers the surface preparation and the complete painting of all immersed and not immersed exposed steel, piping supports, anchors, hangers and etc. at the two (2) softening basins. The Contractor shall furnish all materials, tools and equipment and shall perform the cleaning and painting as specified herein.

2. APPLICABLE DOCUMENTS

The following publications referred to hereafter by basic designation, forms a part of this Specification and will apply in this Contract the same as if printed in full within this document:

American Water Works Association (AWWA)
National Sanitation Foundation (NSF)
Steel Structures Painting Council (SSPC)

3. SUBMITTALS

Shop drawings shall be submitted for review of the following items:

A. Plan of Operation The Contractor is required to submit a Plan of Operation describing their methods and schedule for completion of the work. The Plan shall include, but is not limited to, the following:

1. Construction schedule for project, beginning to end, including intended working days and hours per day. The schedule should coincide with the planned sequence of operation.
2. A Sequence of Operation to include the sequence of work and the cleaning and painting instructions. These instructions shall describe in detail the procedures and equipment to be used to complete the work described herein.

B. Paint and Materials

1. Submit manufacturer's literature including application recommendations and generic makeup for each coating scheduled.
2. List each material and the specific coating, finish system and application.
3. Submit one copy of manufacturer's Material Safety Data Sheets (MSDS) for each type of coating. Contractor shall post copy of MSDS on the site at all times when coating is in process.

4. APPLICATION OF PAINT

The paint system specified requires experienced painters for proper application. The Contractor shall certify that all painters employed on this project are experienced and competent in the application of the system to be used.

5. QUALIFICATIONS

The Contractor must have a minimum of five (5) year history in the painting of water pollution control facilities and demonstrate knowledge of proper Confined Space Entry / Lock-out/Tag-out Procedures.

6. WORK HOURS AND SITE ACCESS

Site access is restricted to normal work hours, 8am to 5pm Monday through Friday. The Contractor shall make arrangements with the Owner if work outside these hours is necessary.

7. MATERIALS

All paint used for this project shall be from the same manufacturer. The Contractor shall submit the manufacturer's current product data sheets which shall certify that the materials are in accordance with these specifications. The Contractor shall submit manufacturer's invoices for the product delivered to the site indicating the product's production dates.

Intermediate coating shall be tinted differently than the finish coat allowing for visual contrast. Color options shall be submitted to the Owner for approval. Color options shall be those available from manufacturer's standard colors.

The paint system used on the immersed surfaces shall have current NSF Standard 61 approval for contact with potable water.

The material listed is Tnemec Company, Inc. and is referenced to define products quality. Equivalent or equal products may be provided.

A. Immersed in Water

Prime Coat:	TNEMEC Series 91-H ₂ O Hydro-Zinc	2.5 – 3.5 DFT
Intermediate Coat:	TNEMEC Series N140-1255 Beige Pota-Pox Plus	3.0 – 6.0 DFT
Top Coat:	TNEMEC Series N140-15BL Tank White Pota-Pox Plus	<u>3.0 – 6.0 DFT</u>
	Total:	8.5 – 15.5 DFT

B. Not Immersed in Water

Prime Coat:	TNEMEC Series 91-H ₂ O Hydro-Zinc	2.5 – 3.5 DFT
Intermediate Coat:	TNEMEC Series N140 Pota-Pox Plus	3.0 – 6.0 DFT
Top Coat:	TNEMEC Series 1075 Endura Shield II	<u>4.0 – 6.0 DFT</u>
	Total:	9.5 – 15.5 DFT

C. Immersed/Not Immersed in Water

1. Prime Coat Requirements:

ASTM B 117: Primer shall pass 10,000 hours salt fog corrosion resistance.

ASTM G 8, Method A: No blistering, cracking, rusting or delamination and no undercutting at holiday after 30 days exposure.

ASTM D 870: No blistering, cracking, rusting or delamination of film after 7 years immersion.

ASTM D 4585: No blistering, cracking, rusting or delamination of film after 4,000 hours exposure.

ASTM G 85: No blistering, cracking, rusting or delamination of film. No more than 1/64" creepage at scribe after 15,000 hours.

ASTM D 4541: No less than 2,083 psi adhesion, average of three tests.

NSF Std. 61: Certified for use in potable water.

2. Intermediate Coat and Immersed Top Coat Requirements:

ASTM D 4060: No more than 140 mg loss after 1,000 cycles.

ASTM D 4541: No less than 1,900 psi pull, average of three tests.

ASTM D 870: No blistering, cracking, checking, rusting or delamination of film after two years continuous immersion.

ASTM G 85: No blistering, cracking, checking, rusting or delamination of film. No more than 1/8" rust creepage at scribe after 5,000 hours exposure.

ASTM B117: No blistering, cracking or delamination of film. No more than 1% rusting on plane. No more than 1/64" rust creepage at scribe after 10,000 hours.

NSF Std. 61: Certified for use in potable water.

D. Not Immersed in Water

1. Top Coat Requirement:

ASTM D4141: No blistering, cracking or chalking. No less than 48% gloss retention and 0.58 DED Hunter Lab Scale color change after 500MJ exposure.

ASTM D 4585: No blistering, cracking, rusting or delamination of film after 4,000 hours exposure.

ASTM G 85: No blistering, cracking, rusting or delamination of film. No more than 1/32" creepage at scribe after 9,000 hours exposure.

ASTM B 117: No blistering, cracking, rusting or delamination of film. No more than 1/16" rust creepage at scribe after 9,000 hours exposure.

Material shall be delivered to the Project Site in factory sealed containers with manufacturer's labels intact and legible. The Owner will not be responsible for the acceptance or storage of materials.

Materials shall be stored in accordance with manufacturer's recommendations.

8. SURFACE PREPARATION

Preparation of the surface prior to paint application shall be in accordance with the current SSPC surface practice standards and with the printed recommendations of the coating manufacturer. All areas shall be viewed by the Owner's representative prior to coating application.

All blast material shall be properly disposed of at an appropriate site. All surfaces shall be dry and free from dirt, dust, mud, oil, grease, rust, and other objectionable substances.

A. Immersed in Water:

1. Prepare all surfaces immersed in water with a SSPC SP-1, solvent cleaning and SSPC-SP10, near white metal blast. Remove all blast debris and surface dust prior to painting.

B. Not Immersed in Water:

1. Prepare all surfaces not immersed in water with a SSPC SP-1, solvent cleaning and SSPC-SP 6, commercial blast cleaning. Remove all blast debris and surface dust prior to painting.

9. APPLICATION

Application of all coatings shall be in strict accordance with these specifications and the instructions of the coating manufacturer's current printed product data sheets and container labels.

Application of the prime coat on bare metal shall be made the same day as the surface preparation. Any bare metal area that is unpainted for more than 12 hours shall be re-prepped prior to painting. When conditions become inappropriate for coating application according to product data sheets, all painting will stop regardless of remaining amounts of mixed paint or equipment setup. Areas painted during inappropriate conditions shall be removed and re-painted under acceptable conditions.

10. TESTING

Dry film thickness tests shall be performed in accordance with current SSPC PA2 Dry Paint Thickness with Magnetic Gauges. Existing coating thicknesses shall be taken uniformly over all surfaces prior to overcoating. At least four times each day, temperature, humidity and dew point checks shall be logged as to time and reading obtained.

The Owner may request testing from the manufacturer for required performance that may include, but is not limited to, adhesion to the substrate and between coating layers, and resistance to abrasion, humidity, freeze/thaw, and Ultra-violet light exposure.

11. SAFETY

The Contractor shall conform to the "General Safety Rules and Regulations" for Construction Industry Commission, Department of Labor, Bureau of Safety and Regulations, Indianapolis, IN, and the Occupational Safety and Health Standards of the United States Department of Labor. This shall be made a condition of each subcontract entered into pursuant to the Contract.

The Owner, or its representative, will not monitor safety practices and will not assume any responsibility for safety. The foreman shall act on site as the safety expert and will perform daily inspections. If the Owner, or its representative, sees questionable practices or procedures, they will bring them to the attention of the foreman. If the action is not corrected, the Owner, or its representative, will bring it to the attention of the local representative of OSHA.

12. ENVIRONMENTAL REGULATIONS

Air quality permits and requirements and all other permits and standards are the responsibility of the Contractor. Copies of the permits shall be attached to the Field Superintendent's copy of the Specifications and shall be on the job site at all times.

13. PROJECT/SITE CONDITIONS

A. Environmental Requirement

1. Use indirect-fired dry heat and ventilate areas to obtain conditions recommended by coating manufacturer.
2. Relative humidity conditions as specified by coating manufacturer shall be adhered to.
3. No unprotected, unheated exterior coating shall be undertaken when cold, damp, foggy, or rainy weather appears probable, nor when the temperature of the substrate is below 50 degrees F, unless listed in this specification or approved in writing by the coating manufacturer.
4. Maintain the manufacturer's environmental requirements until the coating is fully cured.
5. Apply no coating in areas where dust is being generated.
6. Testing and disposal of any waste and coating shall be the responsibility of the Contractor.
7. The Contractor shall cover the Basin Drain structures and remove/properly dispose of all material generated by the Sandblasting and Repainting process.

B. Protection

1. Drop cloths shall be provided in all areas where coating is performed to fully protect other surfaces.
2. Remove hardware, accessories, plates, lighting fixtures, and similar items or provide protection by masking. Upon completion, replace items or remove protection and clean.

C. Completion

1. Upon Substantial Completion, remaining unused material will become property of the Owner. Seal material as required for storage, mark contents with color, type, location, and shelf life, and store on Site where required by the Owner. Provide a minimum of two gallons of each system component and color used.