

SECTION 09 97 13
STEEL TANK LININGS AND COATINGS

PART 1 GENERAL

1.01 REFERENCES

A. The following is a list of standards which may be referenced in this section:

1. American National Standards Institute (ASTM): D4417, Standard Test Methods for Field Measurement of Surface Profile of Blast Cleaned Steel.
2. NACE International: SP0188, Discontinuity (Holiday) Testing of New Protective Coatings on Conductive Substrates.
3. NSF International (NSF): 61. Drinking Water System Components - Health Effects.
4. Society for Protective Coatings (SSPC):
 - a. Surface Preparation Standards:
 - 1) SP 1, Solvent Cleaning.
 - 2) SP 2, Hand Tool Cleaning.
 - 3) SP 3, Power Tool Cleaning.
 - 4) SP 5, White Metal Blast Cleaning.
 - 5) SP 7, Brush-Off Blast Cleaning.
 - 6) SP 10, Near White Blast Cleaning.
 - 7) SP 11, Power Tool Cleaning to Bare Metal.
 - 8) SP 16, Brush-Off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-Ferrous Metals.
 - b. Paint Application Guides:
 - 1) PA 1, Shop, Field, and Maintenance Painting of Steel.
 - 2) PA 2, Procedure for Determining Conformance to Dry Coating Thickness Requirements.
 - 3) PA Guide 10, Guide to Safety and Health Requirements for Industrial Painting Projects.

1.02 DEFINITIONS

A. Terms used in this section:

1. Coverage: Total minimum dry film thickness in mils, or square feet per gallon.
2. MDFT: Minimum Dry Film Thickness, mils.
3. MDFTPC: Minimum Dry Film Thickness per Coat, mils.
4. Mil: Thousandth of an inch.
5. PPDS: Paint Product Data Sheet.
6. PSDS: Paint System Data Sheet.

7. SP: Surface preparation.
8. VOC: Volatile Organic Compounds.

1.03 SUBMITTALS

A. Action Submittals:

1. For each paint system used, furnish a Paint System Data Sheet (PSDS), Paint Product Data Sheet (PPDS), and paint colors available (where applicable) for each product used in paint system. The PSDS and PPDS forms are appended to the end of this section.
2. Submit required information on a system-by-system basis.
3. Provide copies of paint system submittals to coating applicator.
4. Also provide copies of paint system submittals to the coating applicator.
5. Indiscriminate submittal of manufacturer's literature only is not acceptable.
6. Detailed chemical and gradation analysis for each proposed abrasive material.
7. Samples:
 - a. For each paint system used, furnish colors available (where applicable) for each product used in paint system.
 - b. Proposed Abrasive Materials: Minimum 1/2-pound Sample for each type proposed.
8. Completed Quality Control record forms.
9. Manufacturer's written instructions for applying each type of coating.
10. Manufacturer's letter stating that the coating and lining system are suitable for the intended service.

B. Informational Submittals:

1. Coating manufacturer's Certificate of Compliance.
2. Anticipated tank coating sequence.
3. Dehumidification Plan (applicable for field applied coatings):
 - a. Including equipment and air change rates. Submit plan based on type of equipment used, length of time required to hold blast, tank volume, and time of year that coating work is undertaken.
 - b. Provide technical and access information for remote monitoring system.
4. Coating Contractor's Qualification: List of references substantiating experience, as specified herein. This information is required at the time of bidding, as identified in the Instructions to Bidders.
5. Shop and field applicator's quality control program, including, but not limited to:
 - a. Environmental test methods and frequency.
 - b. Steel surface temperature and profile measurement procedure and frequency.

- c. Record keeping form.
- d. Submit written Quality Control Plan.
- 6. Manufacturer's written instructions for applying each type of coating.
- 7. Field Testing:
 - a. Test equipment to be utilized for field testing including dry film thickness gauge and electrical holiday detector.
 - b. Inspection and test reports.
- 8. 24-Month Warranty Period Inspection Report.

1.04 QUALITY ASSURANCE

A. Applicator Qualifications:

- 1. Provide the following:
 - a. Project names and locations of at least three repainting projects for similar size tanks within the past 5 years.
 - b. Names of tank Owners and Engineers.
 - c. Tank capacities.
 - d. Dates of work start and work completion.
 - e. Products applied and application procedures used.
- 2. Include verification from coating manufacturer showing current status as an approved coating applicator.
- 3. Applicator shall have SSPC QP-1 qualifications.

B. Quality Control Manager:

- 1. Designate an individual within the Contractor's organization who will be responsible for overall management of the quality control and have the authority to act in quality control matters for the Contractor.
- 2. The quality control manager may perform other duties on the Project.

C. Regulatory Requirements:

- 1. Meet federal, state, and local agencies having jurisdiction for Site and types of work activities included in Project, including, but not limited to:
 - a. Limitations on emission of volatile organic compounds, dust, and other contaminants.
 - b. Requirements for disturbance, handling, and disposal of paint waste and associated debris, including lead, coal tar, abrasive, and other regulated substances.

D. Industry Best Practices:

1. Perform surface preparation and painting in accordance with recommendations of the following:
 - a. Paint manufacturer's instructions.
 - b. SSPC-PA Guide 10.
2. Do not apply paint in temperatures outside of manufacturer's recommended maximum or minimum allowable, in dust, in smoke-laden atmosphere, in damp or humid weather.
3. Do not perform abrasive blast cleaning whenever relative humidity exceeds 85 percent or whenever surface temperature is less than 5 degrees F above dewpoint of ambient air. More stringent requirements are required for work inside the tank, as specified herein.

E. 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. Size and location of mockup to be agreed on by Contracting Officer.
2. After approval, sample spaces or items shall serve as a standard for similar work throughout the Project.

1.05 QUALITY CONTROL

A. Preinstallation Meeting:

1. Prior to beginning painting Work, schedule a meeting and be prepared to discuss the following subjects, as a minimum:
 - a. Required schedule.
 - b. Sequence of critical path work items.
 - c. Use of Site, access, office and storage areas, security, and temporary facilities.
 - d. Major product delivery and priorities.
 - e. Safety plan.
2. Attendees shall include:
 - a. Government's representatives.
 - b. Contractor's office representative.
 - c. Contractor's resident superintendent.
 - d. Contractor's quality control manager.
 - e. Subcontractors' representatives whom Contractor may desire or Contracting Officer may request to attend.
 - f. Contracting Officer.
 - g. Paint manufacturer's technical representative.
 - h. Others as appropriate.

B. Initial Phase:

1. Review applicable Specifications.
2. Review applicable Drawings.
3. Verify that all materials and/or equipment have been tested, submitted, and approved.
4. Verify that provisions have been made to provide required quality control inspection and testing.
5. Examine the Work area to verify that all required preliminary Work has been completed and is in compliance with the Contract.

C. Follow-up Phases:

1. Perform daily checks to verify continuing compliance with Contract requirements, including control testing, until completion of the particular feature of Work.
2. Review procedures for constructing the Work, including eliminating repetitive deficiencies.
3. Daily checks shall be made a matter of record in the quality control documentation and shall document specific results of inspections for all features of Work for the day or shift.
4. Conduct final follow-up checks and correct all deficiencies prior to the start of additional features of Work that will be affected by the deficient Work. Constructing upon or concealing nonconforming Work will not be allowed.
5. Review procedures for completing the Work, including steps necessary to eliminate repetitive deficiencies.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Shipping:

1. Protect precoated items from damage. Batten coated items to prevent abrasion.
2. Use nonmetallic or padded slings and straps in handling.

B. Deliver materials to Site in unopened containers labeled with designated name, date of manufacture, color, and manufacturer.

C. Store paints in a protected area that is heated or cooled as required to maintain temperatures within range recommended by paint manufacturer.

1.07 SPECIAL GUARANTEE

A. Furnish extended guarantee or warranty. Special guarantee shall provide for correction, or at the option of Contracting Officer, removal and replacement of Work specified in this section found defective during a period of 2 years

after date of Substantial Completion. Duties and obligations for correction or removal and replacement of defective Work as specified in General Conditions.

- B. 24-Month Warranty Period Inspection: Contractor shall conduct inspection of interior and exterior coated surfaces prior to the end of warranty period. Draining the tank for interior inspection shall be coordinated with the Contracting Officer. The Contracting Officer may waive the requirement to enter the tank for the interior inspection at their discretion. Contractor shall notify Contracting Officer six weeks in advance of inspection and the Contracting Officer may attend at their option. Contractor will provide photo documentation of the inspection with photos covering the exterior of the roof and side walls and tank interior side walls and roof. Photos shall provide suitable coverage to conclusively prove the condition of the tank coating and lining. Contractor will prepare a list of coating defects and failures identified, including photos, during inspection and submit them to the Contracting Officer as part of the 24-Month Warranty Period Inspection Report. The list shall serve as notice of repairs required under warranty.

C. Repairs:

1. If repairs are required, requirements of Contract shall apply including, but not limited to, requirements to remove standing water in tanks, perform repair work, and tank cleaning prior to disinfection.
2. Repair defective coatings using coating materials, equipment, and methods similar to those used in original work. Materials shall be of fresh manufacture and within manufacturer's stated shelf life at time of application.
3. Provide extended warranty of 1 year for repairs.
4. Complete repairs within 30 calendar days of Warranty Period Inspection.

1.08 COORDINATION Contractor shall include hold points in the plan for inspections as specified herein. All other work inside the tank shall cease during the inspection activities. Contractor shall provide safe access to all tank surfaces to be inspected, including the use of a lift (with operator), ladder, scaffolding, or other means to access all areas of a tank.

PART 2 PRODUCTS

2.01 GENERAL

A. Components and Materials in Contact with Water for Human Consumption:

1. Comply with the requirements of the Safe Drinking Water Act and other applicable federal, state, and local requirements.

2. Use or reuse of components and materials without a traceable certification is prohibited.

2.02 MANUFACTURERS

- A. Materials, equipment, and accessories specified in this section shall be products of:
 1. Sherwin-Williams.
 2. Or equal.
- B. Physical Characteristics:
 1. Color: As shown on the Drawings where applicable.
- C. Functional: Minimum of 5 years of verifiable experience in manufacture of specified products
- D. Performance: Nationally recognized manufacturers of paints and protective coatings who are regularly engaged in the production of such materials for essentially identical service conditions.

2.03 MATERIALS

- A. Quality: Manufacturer's highest quality products and suitable for intended use.
- B. Materials Including Primer and Finish Coats: Produced by same paint manufacturer.
- C. Thinners, Cleaners, Driers, and Other Additives: As recommended by paint manufacturer of the particular coating.
- D. Epoxy: Polyamidoamine, phenalkamine, or polyamide cured epoxy coatings. Conformance to NSF 61/600 not required but products will be accepted if they do conform to NSF 61.
- E. Epoxy Primer: Two component, polyamidoamine, phenalkamine, or polyamide epoxy primer, compatible with the specified finish. Primer that may contact potable water shall conform to NSF 61. Primer for exterior exposed surfaces may contain anticorrosive pigments.
- F. Finish Coat (Exterior Only): High performance acrylic, two component polyurethane coating.

2.04 COLORS

- A. Formulate with colorants free of lead and lead compounds.
- B. Furnish as selected by Contracting Officer.
- C. Proprietary identification of colors is for identification only. Selected manufacturer may supply matches.

2.05 MIXING

- A. Multiple-Component Coatings:
 - 1. Prepare using contents of container for 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. Keep paint material containers sealed when not in use.

2.06 ABRASIVES

- A. Select abrasive type and size to produce the specified surface cleanliness and provide a surface profile that meets coating manufacturer's recommendations for specific primer and coating system to be applied.
- B. Select abrasives that conform to federal and state regulations for metals and toxicity.

PART 3 EXECUTION

3.01 GENERAL

- A. Surface Preparation and Coating Application: Meet or exceed requirements of these Specifications and SSPC-PA 1, whichever is more stringent.
- B. 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.
- C. Paint new interior and exterior exposed metal surfaces whether specifically mentioned or not, except as modified herein.

- D. Provide Contracting Officer a minimum of 7 days' advanced notice prior to start of surface preparation work or coating application work. Perform such work only in the presence of Contracting Officer, unless Contracting Officer grants prior approval to perform such work in Contracting Officer's absence.
- E. Schedule inspection with Contracting Officer in advance for cleaned surfaces and coats prior to succeeding coat.
- F. Provide dehumidification and heat to maintain environmental conditions within specified ranges during abrasive blasting and paint application activities.
- G. Ventilation for Coating Cure: Provide fans to continuously ventilate tank interior, as required, to assist with coating cure.

3.02 PREPARATION

- A. Remove, mask, or otherwise protect hardware, machined surfaces, nameplates, and other surfaces not intended to be painted.
- B. Protect surfaces adjacent to or downwind of Work area from overspray (if field applied coatings).

3.03 ENVIRONMENTAL CONTROLS

- A. Dehumidification Equipment (if required at shop or field applied):
 - 1. Provide full-time dehumidification and heating for field painting interior of tank. Dehumidification and heating equipment shall be provided by a supplier with at least 3 years' experience with necessary equipment.
 - 2. At Contractor's option, dehumidification equipment may also be used during curing process.
 - 3. Provide desiccant dehumidifiers with a single rotary desiccant wheel capable of fully continuous operation. No liquid, granular, or loose lithium chloride drying systems will be allowed.
 - 4. Seal interior space of tank and maintain a slight positive pressure as recommended by supplier of dehumidification equipment, unless dust from the blasting operation is hazardous. If the dust is hazardous, provide filtration as specified herein.
 - 5. Size equipment to provide a minimum of one air change per hour. Relative humidity inside the tank shall be less than 80 percent at all times during surface preparation, paint application, and paint curing activities.
 - 6. Dehumidification equipment shall continuously maintain a dewpoint of air inside tank at least 15 degrees F less than temperature of coldest part of tank when abrasive blasting is underway and 5 degrees F less than the coldest part of the tank during the paint curing period.

7. Provide auxiliary heat as necessary to maintain surface temperature in the range specified by the coating manufacturer. Auxiliary heating equipment shall be approved for use by dehumidification equipment supplier and shall meet the following requirements:
 - a. Install heaters in process air supply duct between, and blended with, dehumidifier as close to space as possible.
 - b. Use electric, indirect fired combustion, or steam coil auxiliary heaters. Direct fired space heaters will not be allowed during blasting, coating, or curing cycles.
 - c. Equip heaters with controls that automatically turn heater off if airflow is interrupted or internal temperature of heater exceeds its design temperature or design temperature of supply duct.
8. Monitoring:
 - a. Field measure and record ambient temperature, relative humidity, dewpoint and tank wall temperature a minimum of twice daily (beginning and end of work shifts) to verify proper environmental levels are achieved inside tank.
 - b. Provide 24-hour Remote Monitoring system, as approved by the Contracting Officer, to continuously monitor and verify relative humidity and temperature conditions inside the tank. The Contracting Officer shall be provided with full access to alarms and data collected by the monitoring system.

B. Filtration System:

1. Designed to remove dust from air so that it does not interfere with dehumidification equipment's ability to control dewpoint and relative humidity inside tank.
2. Air from tank or dust filtration equipment shall not be recirculated through dehumidifier during coating application or when solvent vapors are present.
3. Filtration requirements may be deleted if all environmental and dehumidification requirements can be met without filters.

3.04 PREPARATION OF SURFACES

A. Metal Surfaces:

1. Meet requirements of the following SSPC Specifications:
 - a. Solvent Cleaning: SP 1.
 - b. Hand Tool Cleaning: SP 2.
 - c. Power Tool Cleaning: SP 3.
 - d. White Metal Blast Cleaning: SP 5.
 - e. Brush-Off Blast Cleaning: SP 7.
 - f. Near-White Blast Cleaning: SP 10.

- g. Power Tool Cleaning to Bare Metal: SP 11.
- h. Brush Blasting of Non-Ferrous Metals: SP 16.
- 2. Wherever the words “solvent cleaning”, “hand tool cleaning”, “wire brushing”, or “blast cleaning”, or similar words of equal intent are used in these Specifications or in paint manufacturer’s specifications, they shall be understood to refer to the applicable SSPC Specifications listed above.
- 3. Where air quality 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. 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 solvents and clean cloths.
 - d. Round or chamfer sharp edges and grind smooth burrs, jagged edges, and surface defects.
 - e. Prepare welds and adjacent areas to eliminate undercutting or reverse ridges on weld bead, weld spatter on or adjacent to weld or other area to be painted, and sharp peaks or ridges along weld bead.
 - f. Grind embedded pieces of electrode or wire flush with adjacent surface of weld bead.
- 5. 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 a 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 and disposition of spent aggregate and debris.
 - 1) Waste generated by paint removal operations, including abrasive blast residue that contains paint chips, must be characterized for hazardous and dangerous waste constituents in accordance with federal, state, and local regulations. If it is determined that the waste is hazardous or dangerous, the Contractor shall collect, store,

transport and dispose of the waste in a manner that is compliant with applicable federal, state, and local regulations. The Contractor shall provide a copy of the waste determination analytical results to the Contracting Officer, and the final disposition of the waste shall be certified by the Contractor with a certificate of acceptance and hazardous or dangerous waste manifest, if applicable, from the approved disposal site. Provide the Contracting Officer with the proposed transportation and disposal methods, and the proposed disposal site before removal of any waste or residue from the Project Site. The Contracting Officer will have the right to approve or disapprove of the transportation and disposal methods and the disposal site selected by the Contractor.

6. 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 blast cleaned. Reblast surfaces that have started to rust before they are coated.

3.05 APPLICATION

A. General:

1. The intention of these Specifications is for existing and new, interior and exterior metal and submerged metal surfaces to be painted, whether specifically mentioned or not, except as modified herein.
2. Coatings Subject to Immersion:
 - a. Apply coatings to internal tank, pipe surfaces, nozzle bores, access hatch, flange gasket sealing surfaces, carbon steel internals, and stainless steel internals unless otherwise specified.
 - b. Curing:
 - 1) Obtain full cure for completed system.
 - 2) Consult coatings manufacturer's written instructions.
 - 3) Do not immerse coating until completion of curing cycle.
 - 4) Meet or exceed minimum curing time requirements presented herein to ensure full cure and avoid the presence of VOCs in stored water when tank is initially filled.
3. Apply coatings in accordance with paint manufacturer's recommendations. Allow sufficient time between coats to ensure thorough drying of previously applied coat.
4. Prior to assembly or installation, paint units to be bolted together and to structures.

5. Where more than one coat of a material is applied within a given system, alternate color to provide a visual reference that required number of coats have been applied.
6. With brush, work coating into areas that are difficult to paint by spray.

B. Stripe Coating:

1. Consists of one coat, brush applied, to coating thickness specified.
2. Apply between primer and intermediate coats.
3. Color shall contrast intermediate coat to allow visual verification of application.
4. Apply to welds, edges, angles, fasteners, and other irregular surfaces located inside tanks.

C. 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. Maximum film build per coat shall not exceed coating manufacturer's recommendations.

3.06 PROTECTIVE COATINGS SYSTEMS AND APPLICATION SCHEDULE

A. System No. 1A Submerged Metal—Water (Epoxy):

Surface Prep.	Paint Material	Min. Coats, Cover
Prior to Application of Paint: Abrasive Blast (SP 5)	Epoxy (White)	1 coat, 4 MDFT
	Epoxy Filler	As required to fill pits and provide a smooth surface for coating
	Stripe Coat with Epoxy (grey or beige)	1 coat, 3 MDFT
	Epoxy Intermediate Coat (grey or beige)	1 coat, 4 MDFT
	Epoxy Finish Coat (white)	1 coat, 4 MDFT

1. Minimum Dry Film Thickness, Total System:
 - a. Nonstripe Coated Areas: 12 MDFT.
 - b. Stripe Coated Areas: 15 MDFT.
2. Application Schedule: Coat all metal surfaces inside tank, including, but not limited to, steel plates, structural steel, stainless steel battens and

fasteners, and overflow piping, hatches, covers, ladders, landings, and couplings.

B. System No. 5A Exposed Metal:

Surface Prep.	Paint Material	Min. Coats, Cover
Abrasive blast weld seams and localized coating defects to near white metal per SSPC SP-10	Epoxy Primer (bare metal)	1 coat, 4 MDFT
	Exterior Surface Tolerant Epoxy Primer, to 100% of Exposed Surfaces	1 coat, 4 MDFT
	Finish Coat (Polyurethane)	1 coat, 3 MDFT

1. Application Schedule: Coat all exposed exterior metal surfaces of tank.

3.07 FIELD QUALITY CONTROL

A. Test Equipment:

1. Provide a dry film thickness gauge to test coating thickness as specified in mils. Use magnetic or electronic type as manufactured by Elcometer, DeFelsko, or approved equal.
2. Provide electrical holiday detector, low voltage, wet sponge type to test finish coat less than 20 mils dry film thickness, as manufactured by Elcometer, Tinker, and Razor, or approved equal.
3. Provide surface profile gauges to verify profile.
4. Provide industry-standard meters as required to document ambient temperature, surface temperature, and relative humidity.
5. Provide other gauges and meters as required for quality control.

B. Surface Profile Measurements: Measure surface profile with procedures described in ASTM D4417. Measure the surface profile a minimum of three times per day per blaster.

C. Environmental Conditions:

1. Measure and record environmental conditions during interior recoating work as specified herein.
2. Measure and record environmental conditions during exterior coating work a minimum of three times a day, at the beginning of each work shift, midway through each work shift, and at end of each work shift.

D. Film Thickness Measurements and Electrical Inspection of Coated Surfaces:

1. Perform with properly calibrated instruments.
2. Repair or recoat defective areas as necessary for compliance with Specifications.

3. All coats are subject to inspection by Contracting Officer and coating manufacturer's representative.
 4. 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.
- E. Thickness Testing:
1. Measure coating thickness specified in mils with magnetic or electronic type dry film thickness gauge in accordance with SSPC-PA 2.
 2. Check each coat for correct thickness. Do not make measurement before a minimum of 8 hours after application of coating.
 3. After repaired and recoated areas have dried sufficiently, repeat tests to demonstrate specified dry film thickness has been achieved.
- F. Holiday (Pinhole) Testing: Test finish coat on 100 percent of tank interior and all other submerged surfaces for holidays and discontinuities with low-voltage or high-voltage electrical holiday detector, depending on final dry film thickness. Conduct test in accordance with NACE SP0188.
- G. Submit copies of Contractor's completed daily records at the end of each work week, or daily if requested by the Contracting Officer.
- H. Unsatisfactory Application:
1. If 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, visible holidays, or other imperfections are causes for rejection.
 3. Repair defects in coating systems in accordance with written recommendations of coating manufacturer.
 4. Leave staging up until Contracting Officer, or their representative, has inspected surface or coating. Replace staging removed prior to approval by Contracting Officer.
- I. Damaged Coatings, Pinholes, and Holidays:
1. Feather edges and repair in accordance with recommendations of paint manufacturer.
 2. Hand or power sand visible areas of chipped, peeled, or abraded paint, and feather edges. Follow with primer and finish coat in accordance with Specifications. Depending on extent of repair and appearance, a finish sanding and topcoat may be required.

3. Apply finish coats, including touchup and damage-repair coats in a manner that will present a uniform texture and color-matched appearance.

3.08 MANUFACTURER'S SERVICES

- A. Coating manufacturer's technical representative shall be present at Site as follows:
 1. On the first day of application of coating for each tank.
 2. As required for application quality assurance, and to determine compliance with manufacturer's instructions and these Specifications.
 3. As necessary to resolve field problems attributable to or associated with manufacturer's products.
 4. To verify full cure of coating prior to placing coated surfaces into immersion service.

3.09 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. Completely remove paint spots, oil, or stains upon adjacent surfaces and floors and leave Site clean.

3.10 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 (PSDS)

Complete and attach manufacturer's Technical Data Sheet to this PSDS for each coating system.

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

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.: _____

PAINT PRODUCT DATA SHEET (PPDS)

PRODUCT: _____

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.: _____

