SECTION 09 96 00

INDUSTRIAL PROTECTIVE AND MARINE COATINGS

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\*\* NOTE TO SPECIFIER \*\* Sherwin-Williams; paints and coatings.  
  
This section is based on the products of Sherwin-Williams, which is located at:  
101 Prospect Ave.  
Cleveland, OH 44115  
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Sherwin-Williams knows how to make sure your vision is achieved.  
On every project, under any condition, we're there for you every step of the way providing quality innovative coatings and colors along with expert service and support. We're a one-stop-supplier for architects, specifiers, engineers or design professionals. And we follow through with contractors to ensure that your performance requirements are met on time and on budget and that the end result remains true to your vision.  
  
Solutions to make specification easy.  
From floors to walls to trim to ceilings, structural steel to masonry to architectural wood working, Sherwin-Williams has the most innovative products for every commercial or industrial application and substrate. By using the latest technologies, we're able to offer better choices, more options and never-before possibilities.   
  
We help you:  
 - Meet today's specification challenges  
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 - Meet VOC regulations  
 - Improve application efficiencies  
  
Sherwin-Williams does more.  
 - Brand name reliability and expertise that adds value.  
 - Prompt availability and fast delivery to help keep projects on time and on budget  
 - Product specification, color matching and on-site advice  
 - Local service and technical support through more than 4,000 company-operated stores that are near job sites  
 - More than 1,800 representatives on hand to answer the needs of architects, specifiers,  
 engineers, facility managers and contractors  
Uniform product performance, pricing, and colors from site to site, project to project

1. GENERAL
   1. SECTION INCLUDES
      1. Industrial protective and marine coatings and surface preparation for the following coating systems:
         1. Primers for ferrous metals, field or shop applied.
         2. Exposed atmospheric high performance coating systems.
         3. Immersion or submerged coating systems.
         4. Floor coating systems.
         5. Secondary containment coating systems.
         6. High temperature coating systems.
         7. Waterproofing sealing coating systems.
         8. Chemical stain resistant industrial wall system.
         9. Antigraffiti polyurethane system.
         10. Epoxy aluminum isolation system.
   2. SCOPE
      1. All structures within said facility shall be prepared and coated per the products specified and in the schedule listed at the end of this Section.
      2. General Exposed Exterior or Surfaces to be Painted:
         1. All concrete, conduit, ducting, or galvanized metal surfaces shall be coated when in a corrosive atmosphere.
         2. Piping, valves, fittings, and hydrants.
         3. Ductwork and supports.
         4. Electrical boxes or panels adjacent to a painted surface.
         5. Fiberglass.
         6. Miscellaneous ferrous metal.
         7. Hollow metal doors frames.
         8. Pipe bollards.
         9. Structural steel.
         10. Exposed wood.
         11. Exposed stucco.
         12. Copper and brass surfaces.
         13. Gypsum Board.
         14. Concrete Walls.
         15. Secondary Containment.
         16. Submerged Concrete Items.
         17. Below grade concrete.
         18. Concrete Tanks.
         19. CMU Walls.
         20. Steel Tanks Interior and Exterior.
         21. Gypsum Wallboard.
         22. Concrete Floors.
      3. General Exposed Interior Surfaces to be Painted:
         1. Concrete walls.
         2. CMU walls.
         3. Structural steel.
         4. Fiberglass.
         5. Gypsum wall board.
         6. Hollow Metal Doors.
         7. Piping, Pipe Supports.
         8. Aluminum in contact with concrete.
      4. General Surfaces Not to be Painted:
         1. Concrete, unless required by items on the concrete coating schedule below or the drawings.
         2. Electrical panels when not adjacent to a painted surface.
         3. Equipment nameplates.
         4. Glass.
         5. Grease fittings.
         6. Machined surfaces.
         7. Platform gratings, stair treads, door thresholds, and other walk surfaces, unless specifically indicated to be coated.
         8. Stainless steel items.
         9. Fiberglass surfaces in immersion.
         10. Prefinished metal such as Kynar coated.
   3. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 03 30 00 - Cast-in-Place Concrete.
    2. Section 04 20 00 - Unit Masonry.
    3. Section 05 12 13 - Architecturally-Exposed Structural Steel Framing.
    4. Section 05 50 00 - Metal Fabrications.
    5. Section 06 20 00 - Finish Carpentry.
    6. Section 06 40 00 - Architectural Woodwork.
    7. Section 08 11 13.13 - Standard Hollow Metal Doors and Frames.
    8. Section 09 21 16.33 - Gypsum Board Area Separation Wall Assemblies.
    9. Section 23 05 00 - Common Work Results for HVAC.
    10. Section 26 05 00 - Common Work Results for Electrical.
  1. DEFINITIONS
     1. Definitions:
        1. Contractor is the party or persons directly contracted or subcontracted through a third party to perform the work described herein.
        2. Engineer is the supervising Engineer of record.
        3. Owner is the facility Owner.
        4. Manufacturer is the materials supplier.
     2. Substrate Identification:
        1. AL: Aluminum.
        2. C: Concrete.
        3. CMU: Concrete Masonry Units.
        4. CO: Copper.
        5. CS: Carbon Steel.
        6. F: Fiberglass.
        7. G: Gypsum Board.
        8. GAL: Galvanized Metal.
        9. PP: Previously Painted.
        10. S: Stainless Steel.
        11. W: Wood.
     3. Service Condition Identification:
        1. A: Atmospheric: Any metal or concrete surface, indoors or outdoors that is exposed to view.
        2. C: Corrosive: pH range 5 to 9: Atmospheric exposure to corrosive, caustic or acidic agent, chemicals, chemical fumes, chemical mixture, solutions incidental contact splash on walls or solutions Submerged conditions where the pH is 5 to 9 and H2S exposure is medium to low.
        3. F: Fumes: Gas, Smoke, or Vapor, irritating, or offensive.
        4. HC: High Corrosive: pH range below 4 or above 10: Atmospheric exposure to corrosive, caustic or acidic agent, chemicals, chemical fumes, chemical mixture, solutions incidental contact splash on walls or solutions Submerged conditions where the pH is 5 to 9 and H2S exposure is high.
        5. HFT: Heavy Forklift Traffic Floor: Horizontal concrete surface subject to point loads above 6,000 lbs (2721.5 kg). typically related to hard tire forklift activity.
        6. HT: High Temperature: Continuous non immersion temperature where the substrate temperature is above 250 F (121 C).
        7. IC: Immersion Continuous: Substrate will be continually immersed in aqueous solution, including corrosive, high corrosive, or non-corrosive solutions, liquids, water or other mixtures.
        8. LFT: Light Foot Traffic Floor: Horizontal concrete surface subject to point loads below 5,000 pounds (2268 kg). Normally associated with pedestrian traffic with hand carts or trucks.
        9. NC: Non Corrosive: Atmospheric or submerged exposure to corrosive, caustic or acidic agent, chemicals, chemical fumes, chemical mixture or solutions where the associated exposures are relatively neutral or benign.
        10. ND: Normally Dry: Substrate is exposed to moisture from environmental conditions but remains dry more than 85 percent of its service life.
        11. NW: Normally Wet: Substrate is exposed to moisture from environmental conditions and remains moist not less than 85 percent of its service life.
        12. PW: Potable Water: Water suitable for human consumption as defined by ANSI 61.
        13. S: Submerged: Substrate is continually immersed in an aqueous solution.
        14. SC: Secondary Containment, 72 Hour Immersion: Substrate will be continually immersed for 72 hours in a chemical solution as associated with EPA containment requirements.
        15. SP: Splash and Spill: Substrate is frequently subjected to exposure to aqueous solutions, but is generally cleaned up within 2-8 hours
        16. UV: Ultraviolet: Substrate is exposed to ultraviolet sunlight.
  2. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. Air Quality Management Districts:
       1. Bay Area Air Quality Management District (BAAQMD).
       2. South Coast Air Quality Management District (SCAQMD).
          1. RULE 1113 7/1/2008.
    2. ASTM International (ASTM):
       1. ASTM D 16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications.
       2. ASTM D 4258, Standard Practice for Surface Cleaning Concrete for Coating.
       3. ASTM D 4259, Standard Practice for Abrading Concrete.
       4. ASTM D 4261, Standard Practice for Surface Cleaning Concrete Unit Masonry for Coating.
       5. ASTM D 4262, Standard Test Method for pH of Chemically Cleaned or Etched Concrete Surfaces.
       6. ASTM D 4263, Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method.
       7. ASTM D 4417 Standard Test Methods for Field Measurement of Surface Profile of Blast Cleaned Steel.
       8. ASTM D 4541, Standard Test Method for Pull-off Strength of Coatings Using Portable Adhesion Testers.
       9. ASTM D 7091 - Standard Practice for Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to Ferrous Metals and Nonmagnetic, Nonconductive Coatings Applied to Non-Ferrous Metals.
    3. E84, Standard Test Method for Surface Burning Characteristics of Building Materials.
    4. International Concrete Repair Institute (ICRI):
       1. 310.2 - Surface Preparation for Concrete.
       2. CSP - Concrete Surface Profile.
    5. NACE International (NACE):
       1. SP0178 - Design, Fabrication, and Surface Finish Practices for Tanks and Vessels to Be Lined for Immersion Service.
       2. SP0188-06 - Discontinuity (Holiday) Testing of Protective Coatings.
    6. National Association of Pipe Fabricators (NAPF):
       1. 500-03-04 Abrasive Blast Cleaning for Ductile Iron Pipe.
       2. 500-03-04 Abrasive Blast Cleaning for Ductile Iron Fittings.
    7. The Society for Protective Coatings (SSPC):
       1. SSPC-SP 1 - Solvent Cleaning.
       2. SSPC-SP 2 - Hand Tool Cleaning.
       3. SSPC-SP 3 - Power Tool Cleaning.
       4. SSPC-SP 5 / NACE 1 - White Metal Blast Cleaning.
       5. SSPC-SP 6 / NACE 3 - Commercial Blast Cleaning.
       6. SSPC-SP 7 - Brush off Blast Cleaning.
       7. SSPC-SP 10 / NACE 2 - Near White Metal Blast Cleaning.
       8. SSPC-SP 11 - Machine Tool Cleaning to Bare Metal.
       9. SPSC-SP 12 / NACE 5 - Waterjet Cleaning.
       10. SSPC-SP 13 / NACE 6 - Surface Preparation for Concrete.
       11. SSPC-SP 14 / NACE 8 - Industrial Blast Cleaning.
       12. SSPC-SP 15 - Commercial Grade Power Tool Cleaning.
       13. SSPC-SP 16 - Brush off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non Ferrous Metals.
       14. SSPC-SP WJ-1 / NACE WJ-1 Clean to Bare Substrate.
       15. SSPC-SP WJ-2 / NACE WJ-2 Very Thorough Cleaning.
       16. SSPC-SP WJ-3 / NACE WJ-3 Thorough Cleaning.
       17. SSPC-SP WJ-4 / NACE WJ-4 Light Cleaning.
       18. SSPC-PA1 - Best Practices for Paints and Coatings Application.
       19. SSPC-PA2 - Measurement of Dry Coating Thickness with Magnetic Gauges.
       20. SSPC-PA71 - Procedure for Determining Conformance to Steel Profile/Surface Roughness/Peak Count Requirements.
    8. United States Environmental Protection Agency (EPA):
       1. Method 24 - Surface Coatings.
  1. QUALIFICATIONS
     1. Coating manufacturer's authorized representative shall provide written statement attesting that the applicator has been instructed on proper preparation, mixing and application procedures for coatings specified.
     2. Applicators shall have a minimum of 5 years experience in application of similar products on similar project.
        1. Contractor shall possess a valid state license as required for performance of the painting and coating work called for in this specification.
        2. Provide references for minimum of three different projects completed in last five years with similar scope of work.
           1. Include name and address of project, size, and scope of work.
     3. Applicators shall possess current SSPC-QP certifications as required by the Owner and Engineer.
  2. SUBMITTALS
     1. Submit all required documentation noted herein and under provisions of Section 01 33 13 - Certificates, Submittal Procedures.
     2. Product Data: Manufacturer's data sheets on each paint and coating product should include:
        1. Colors available for each product (where applicable).
        2. Product characteristics and coating manufacturer's guidelines and recommendations for surface preparation, painting, drying, curing, handling, shipping, and storage of painted structural steel.
        3. Surface preparation requirements.
        4. Storage and handling requirements and recommendations.
        5. Application methods.
        6. VOC compliance.
        7. MSDS.
     3. Contractor Work Plan:
        1. In general, the contractor shall supply the Owner or Engineer's representative with a plan of work. The work plan should detail but is not limited to the following items.
        2. Proposed methods of containment, collection, and disposal of related debris, rinse water, or trash.
        3. Proposed surface preparation standards and methods to achieve standard for each space or substrate identified on the plans, drawings, or finish schedule.
        4. Proposed coating system for each space or substrate identified on the plans, drawings, or finish schedule.
        5. Confirmation of compatibility for shop and field applied coatings. (where applicable).
        6. Proposed methods and equipment to be used for paint application.
        7. Proposed methods for maintaining proper environmental conditions during surface preparation, application, and curing cycles of the coating materials.
        8. Proposed methods and job safety analysis procedures for maintaining a clean, safe and secure jobsite during work activity.
        9. Proposed methods to protect coating during curing, shipping, handling, and storage.
        10. Proposed methods for storing materials.
        11. Proposed methods and examples of daily reports of contractor work progress.
        12. Potential hazards and mitigation, work processes, scheduling conflicts or other planning items which would hinder successful and timely completion of the project.
     4. Selection Samples: Submit a complete set of color chips that represent the full range of manufactures color samples available.
     5. Verification Samples: For each finish product specified, submit samples that represent actual product, color, and sheen.
     6. Mock Up Samples:
        1. Include a mock-up if the project size or quality warrant taking such a precaution.
           1. Sample of paint, finishes, and other coating materials shall be submitted on 8.5 x 11 inch (216 x 279 mm) sheet metal. Each sheet shall be completely coated over its entire surface with one protective coating material, type, and color.
           2. Two sets of color samples to match each color selected by the Engineer from the manufacturer's standard color sheets. If custom mixed colors are indicated, the color samples shall be made using color formulations prepared to match the color samples furnished by the Engineer. The color formula shall be shown on the back of each color sample.
        2. Finish area designated by Architect.
        3. Provide samples that designate prime and finish coats.
        4. Do not proceed with remaining work until the Architect approves the mock-up samples.
  3. QUALITY ASSURANCE
     1. Quality assurance procedures and practices shall be at the discretion of the Engineer or Owner. It provides oversight of quality control monitoring of all phases of the installation process including but not limited to surface preparation and application of coatings.
        1. Requirements for acceptable quality control methods shall be utilized and defined by the Owner or Engineer.
        2. Procedures or practices for quality control practices not specifically defined in this Section may be utilized, provided they meet recognized and acceptable professional standards and are accepted by the Engineer or Owner's representative.
        3. Arrange for coating manufacturer's representative to attend preconstruction conferences and make periodic visits at the construction site to provide consultation services during surface preparation work and application of coatings.
        4. Quality assurance activities may be performed by a third party inspection firm contracted by the Owner or specifying Engineer on their behalf at any time during the project.
     2. Pre-Installation Conference:
        1. The contractor, the installation sub-contractor, and the lining system manufacturer's representative shall meet on site with the Owner's representative. Particular emphasis shall be placed on these specification requirements, safety, weather conditions, surface preparation, material application, and inspection.
        2. The contractor shall submit to the Owner's representative any revisions or changes agreed upon, reasons thereof, and parties agreeing or disagreeing with them.
     3. Surface Preparation: Preparation of all surfaces and application of coatings specified in this section shall be in strict accordance with coating manufacturer's instructions as supplemented by these specifications.
     4. Coating Application: Apply coatings in strict accordance with manufacturer's material data sheets with particular attention to curing and drying times and temperatures.
        1. Substrate Conditions: Do not proceed with immersion, submerged, industrial resinous flooring, and chemical containment work until substrate preparation and tolerances have been approved by the Owner's representative, chemical resistant system manufacturer's representative, the approved installation sub-contractor, and the contractor.
     5. Inspection of Dry Film: Thickness of coatings shall be checked with a nondestructive, magnetic-type thickness gauge.
        1. Ensure all dry film thickness requirements as specified have been met. Readings shall be performed at or above the frequency specified in SSPC-PA2. Meet the minimum requirements for SSPC-PA2.
        2. Use an instrument such as a Tooke Gauge if a destructive tester is deemed necessary.
        3. Test coating integrity of all surfaces with an approved inspection device.
        4. Holiday detection testing: Shall be accomplished over 100 percent of coated surfaces, and in strict accordance with NACE SP0188.
           1. For "high voltage" holiday inspection equipment used to inspect film thickness between 20 -50 mils adjusted voltage shall not exceed voltage recommended by manufacturer of coating system.
           2. For "wet sponge" holiday inspection equipment used to inspect film thickness between 8 and 10 mils, add a non-sudsing type wetting agent to water prior to wetting detector sponge.
        5. No pinholes or other irregularities will be permitted in final coating.
     6. Inspection Testing Devices: Provide following testing devices to be jointly used on this project by the contractor and Engineer. Devices shall remain property of contractor during and after project.
        1. Surface profile Comparator or Testex Tape to measure surface profile prior to coating application.
        2. Psychrometer and psychometric tables or charts for humidity and dew point determination.
        3. Dry film thickness gauge and calibration blocks for coating thickness testing.
        4. Wet film thickness gauge for coating thickness testing.
        5. 10 times magnifier for examination.
        6. Holiday detector and associated equipment for coating defect determination.
        7. Combustible gas analyzer (sniffer) for safety.
     7. Documentation: Provide daily reports of all contractor activity on site to the Engineer on the Friday, end of work week, for the previous week activity.
        1. Document sample shall be approved by the Engineer prior to reporting.
        2. All documentation shall be delivered electronically to the Engineer upon completion of the project.
        3. Documentation should be consistent with inspection reports utilized by NACE certified inspectors.
  4. DELIVERY, STORAGE, AND HANDLING
     1. Delivery: Deliver manufacturer's unopened containers to the work site. Packaging shall bear the manufactures name, label, and the following list of information:
        1. Product name, type (description).
        2. Application and use instructions.
        3. Surface preparation.
        4. VOC content: for two component products, provide mixed VOC in g/L.
        5. Environmental issues.
        6. Batch date.
        7. Color number.
     2. Storage: Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.
        1. Store materials in an area that is within the acceptable temperature range, per manufacturer's instructions. Protect from freezing.
     3. Handling: Maintain a clean, dry storage area, to prevent contamination or damage to the coatings.
  5. PROJECT CONDITIONS
     1. Maintain environmental conditions during surface preparation, application, and curing of installed coating system.
        1. Temperature, humidity, and ventilation must be within limits recommended by manufacturer for optimum results. Do not apply coatings under environmental conditions outside manufacturer's absolute limits.
     2. Dehumidification and heating for coating of immersion environments shall be effectively designed and used when needed to maintain proper environmental conditions for proper surface preparation, coatings application, and curing of the installed coating.
        1. Confirm site electrical power source availability prior to bidding of project. If on site power is not available, provide internal combustion engine generators of sufficient power for the dehumidification and heating equipment.
     3. Heating equipment including electric, indirect combustion, indirect fired, or steam coil methods may be used.
        1. Direct fired propane heaters shall not be used during surface preparation, application and curing of the coating.
        2. Heating equipment shall be intrinsically safe or deemed safe by safety personnel prior to use on the job site.
     4. Substrate moisture content shall be below manufacturer's recommendation for each substrate to be coated.

\*\* NOTE TO SPECIFIER \*\* Delete warranty if not required.

* 1. WARRANTY
     1. Inspection:
        1. An inspection may be conducted during the eleventh month following completions of the coating work. The contractor and a representative of the coating material manufacturer shall attend this inspection. Defective work shall be repaired in accordance with these specifications and to the satisfaction of the Owner. The Owner may, by written notice to the contractor, reschedule the inspection to another date within the one year correction period or may cancel the inspection altogether. The contractor is not relieved of its responsibilities to correct defects.
     2. Extended Maintenance of Chemical Tank Lining Systems:
        1. The contractor shall promptly repair any defects in the chemical resistant lining system for a period of two years after the lining has been placed into service. Such maintenance shall include repair of the chemical tank and any equipment or facilities damage by the corrosive action of the chemicals.
     3. Steel Reservoir Coating System Inspection:
        1. An inspection will be conducted during the eleventh month following completions of the coating work. The contractor and a representative of the coating material manufacturer shall attend this inspection. Defective work shall be repaired in accordance with these specifications and to the satisfaction of the Owner. The Owner may, by written notice to the contractor, reschedule the inspection to another date within the one year correction period or may cancel the inspection altogether. The contractor is not relieved of its responsibilities to correct defects.

1. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: The Sherwin-Williams Company,101 Prospect Avenue NW, Cleveland, OH 44115, www.sherwin-williams.com.

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
    2. To establish equality under Section 01 60 00 - Product Requirements the contractor shall furnish satisfactory documentation from the manufacturer of the proposed substitute or "or-equal" product that the material meets the indicated requirements and is equivalent or better in the following properties.
       1. Quality.
       2. Durability.
       3. Resistance to abrasion, impact, or physical damage.
       4. Life expectancy.
       5. Ability to recoat in the future.
       6. Solids content by volume.
       7. Dry film thickness per coat.
       8. Compatibility with other coatings.
       9. Suitability for the intended service.
       10. Resistance to chemical attack.
       11. Temperature limitations during application and in service
       12. Comparable performance test results.
    3. Protective coating materials shall be standard products produced by recognized manufacturers who are regularly engaged in production of such materials for essentially identical service conditions. When requested, the contractor shall provide the Engineer with the names of not less than ten successful applications of the proposed manufacturer's products that comply with these requirements.
    4. Standard approved painting, coating, and lining systems are defined herein. Apply approved systems according to the finish schedule.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. PRIMERS, FERROUS METALS, FIELD OR SHOP APPLIED

\*\* NOTE TO SPECIFIER \*\* Delete paragraphs not required.

* + 1. Organic Zinc Rich Primer:
       1. Minimum total film thickness, 3 mils dft with use of epoxy intermediate, polyurethane finish.
       2. Use zinc primer as alternate primer in lieu of epoxy primer for ferrous metal substrates as specified for structural steel as noted on the plans. Prepare surfaces per SSPC-SP6 and apply to all surfaces including bolted connection areas where Class B Slip is required.
       3. Zinc primer shall meet Class B Slip requirements.
       4. Prime Coat, Minimum 3 mils dft: Zinc Clad 4100; Corothane Galvapak Zinc Rich Primer, B69
    2. Epoxy Primer:
       1. Minimum total film thickness, 4 mils dft with use of epoxy intermediate, polyurethane finish.
       2. Use epoxy primer for new equipment and metal substrates where specified.
       3. Prime Coat, Minimum 4 mils dft: Recoatable Epoxy Primer, B67-5 series; Macropoxy 646,B58-600 series.
    3. P3: Alkyd Primer:
       1. Minimum total film thickness, 2 mils dft.
       2. Use epoxy primer for new equipment and metal substrates where specified.
       3. Prime Coat, Minimum 2 mils dft: Steel Spec Primer.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. EXPOSED ATMOSPHERIC HIGH PERFORMANCE COATING SYSTEMS

\*\* NOTE TO SPECIFIER \*\* Delete paragraphsnot required.

* + 1. Industrial Acrylic, Acrylic, Acrylic Finish (S/G, Gloss):
       1. Minimum total film thickness, 4 mils dft over primer.
       2. Omit the intermediate coat of the coating system when the system is being applied to previously coated surfaces.
       3. New concrete or masonry substrates shall be primed with epoxy block filler. Existing, previously painted concrete or masonry substrates shall be primed according to the schedule. Fill all voids, bug holes, imperfections in concrete or masonry substrates.
       4. New ferrous metal substrates may also be primed with universal alkyd shop primer from submitted manufacturer.
       5. Spot prime all exposed substrates with the designated new substrate primer.
       6. Prime:
          1. Smooth Masonry, Minimum 1.7 mils dft: Loxon Concrete Masonry Primer, A24,.
          2. CMU, Minimum 10 mils dft : Pro Industrial Heavy Duty Block Filler, B42-150 series.
          3. Ferrous Metal, Minimum 1.7 mil dft: Pro Industrial ProCryl Primer, B66-1300 series.
          4. Non Ferrous Metal, Minimum 1.7 mils dft: Pro Industrial ProCryl Primer, B66-1300 series.
          5. PVC, CPVC: Pro Industrial ProCryl Primer, B66-1300 series.
          6. Previously Painted, Minimum 2 mils dft: Pro Industrial ProCryl Primer, B66-1300 series.
       7. Intermediate Minimum 2 mils dft: Shercryl High Performance Acrylic, B66-300 series; Pro Industrial Acrylic, B66-600 series.
       8. Finish Minimum 2 mils dft: Shercryl High Performance Acrylic, B66-300 series; Pro Industrial Acrylic, B66-600 series.
    2. Industrial Epoxy, Polyurethane Finish (S/G, Gloss):
       1. Minimum total film thickness, 8 mils dft, 12 mils dft with block filler.
       2. Omit the intermediate coat of the coating system when the system is being applied to previously coated surfaces.
       3. New concrete or masonry substrates shall be primed with epoxy block filler. All bug holes, voids shall be filled to provide a smooth even surface. Existing, previously painted concrete or masonry substrates shall be primed according to the schedule.
       4. Spot prime all exposed substrates with the designated new substrate primer.
       5. Prime:
          1. Concrete or CMU or Masonry, Minimum 12 mils dft: Kem Cati Coat HS, B42-400 Series.
          2. Ferrous Metal,Shop, Minimum 4 mils dft: Shop: Recoatable Epoxy Primer, B67-5 series Series.
          3. Ferrous Metal, Field, Minimum 5 mils dft: Macropoxy 646, B58-600 Series.
          4. Non Ferrous Metal, Minimum 5 mils dft: Macropoxy 646, B58-600 Series.
          5. Previously Painted, Minimum 4 mils dft: Macropoxy 646, B58-600 Series.
       6. Finish, Minimum 3 mils dft : Hi Solids Polyurethane.
    3. Industrial Epoxy, Epoxy, Polyurethane Finish (S/G, Gloss):
       1. Minimum total film thickness, 12 mils dft, 25 mils dft with block filler.
       2. New concrete or masonry substrates shall be primed with epoxy block filler. Existing, previously painted concrete or masonry substrates shall be primed according to the schedule.
       3. Spot prime all exposed substrates with the designated new substrate primer.
       4. Prime:
          1. Concrete or CMU or Masonry, Minimum 12 mils dft: Kem Cati Coat HS, B42-400 Series.
          2. Ferrous Metal,Shop, Minimum 4 mils dft: Shop: Recoatable Epoxy Primer, B67-5 Series.
          3. Ferrous Metal, Field, Minimum 5 mils dft: Macropoxy 646, B58-600 Series.
          4. Non Ferrous Metal, Minimum 5 mils dft: Macropoxy 646, B58-600 Series.
          5. Previously Painted, Minimum 4 mils dft: Macropoxy 646, B58-600 Series.
       5. Intermediate, Minimum 5 mils dft: Macropoxy 646, B58-600 Series.
       6. Finish, Minimum 3 mils dft: Hi Solids Polyurethane.
    4. Industrial Epoxy, Epoxy Finish (S/G):
       1. Minimum total film thickness, 10 mils dft, 25 mils dft with block filler.
       2. New concrete or masonry substrates shall be primed with epoxy block filler. Existing, previously painted concrete or masonry substrates shall be primed according to the schedule.
       3. Omit the intermediate coat when color coding FBE.
       4. Spot prime all exposed substrates with the designated new substrate primer.
       5. Prime:
          1. Concrete or CMU or Masonry, Minimum 12 mils dft: Kem Cati Coat HS, B42-400 Series.
          2. Ferrous Metal, Minimum 4 mils dft: Shop: Recoatable Epoxy Primer, B67-5 Series.
          3. Ferrous Metal, Minimum 5 mils dft: Macropoxy 646, B58-600 Series.
          4. Non Ferrous Metal, Minimum 4 mils dft: Macropoxy 646, B58-600 Series.
          5. Hollow Metal, Minimum 3 mils dft: Macropoxy 646, B58-600 Series.
          6. PVC, CPVC, Minimum 3 mils dft: Macropoxy 646, B58-600 Series.
          7. Previously Painted, Minimum 3 mils dft: Macropoxy 646, B58-600 Series.
       6. Finish, Minimum 5 mils dft: Macropoxy 646, B58-600 Series.
    5. Industrial Epoxy, Epoxy, Epoxy Finish (S/G):
       1. Minimum total film thickness, 14 mils dft, 25 mils dft with block filler.
       2. New concrete or masonry substrates shall be primed with epoxy block filler. Existing, previously painted concrete or masonry substrates shall be primed according to the schedule.
       3. Omit the intermediate coat when color coding FBE.
       4. Spot prime all exposed substrates with the designated new substrate primer.
       5. Prime:
          1. Concrete or CMU or Masonry, Minimum 12 mils dft: Kem Cati Coat HS, B42-400 Series.
          2. Ferrous Metal, Minimum 4 mils dft: Shop: Recoatable Epoxy Primer, B67-5 Series.
          3. Ferrous Metal, Minimum 5 mils dft: Macropoxy 646, B58-600 Series.
          4. Non Ferrous Metal, Minimum 5 mils dft: Macropoxy 646, B58-600 Series.
          5. Hollow Metal, Minimum 3 mils dft: Macropoxy 646, B58-600 Series.
          6. PVC, CPVC, Minimum 3 mils dft: Macropoxy 646, B58-600 Series.
          7. Previously Painted, Minimum 3 mils dft: Macropoxy 646, B58-600 Series.
       6. Intermediate, Minimum 5 mils dft: Macropoxy 646, B58-600 Series.
       7. Finish, Minimum 5 mils dft: Macropoxy 646, B58-600 Series.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. IMMERSION OR SUBMERGED COATING SYSTEMS

\*\* NOTE TO SPECIFIER \*\* Delete paragraphs not required.

* + 1. Epoxy High Solids, Non Potable:
       1. Minimum total film thickness, 20 mils dft.
       2. Utilize epoxy fairing compound to fill pits, voids, or smooth surface irregularities.
          1. Filler and Surfacing Epoxy: Steel Seam FT910, as needed to fill voids or surface irregularities.
       3. Prime, Minimum 8 mils dft: SherGlass FF Epoxy, B62-500 Series.
       4. Finish, Minimum 8 mils dft : SherGlass FF Epoxy, B62-500 Series.
    2. Epoxy High Solids: Potable Water:
       1. Minimum total film thickness, 15 mils dft.
       2. Utilize epoxy fairing compound to fill pits, voids, or smooth surface irregularities.
          1. Filler and Surfacing Epoxy: Steel Seam FT910, as needed to fill voids or surface irregularities.
       3. Prime, Minimum 5 mils dft: Macropoxy 5500, B58-740 Series.
       4. Intermediate, Minimum 5 mils dft: Macropoxy 5500, B58-740 Series.
       5. Finish, Minimum 5 mils dft: Macropoxy 5500, B58-740 Series.
    3. Epoxy High Solids, Non Potable: Concrete:
       1. Minimum total film thickness, 20 mils dft over surfacing material.
       2. New concrete surfaces shall be covered complete with epoxy mortar to a minimum of 1/16 in (1.5 mm) to restore an even surface plain for subsequent coating system installation.
          1. Concrete Filler and Epoxy Mortar 1/16 to 1/4 in (1.5 to 6 mm): Duraplate 2300.
          2. Concrete Repair Filler and Microsilica Mortar 1/8 to 2 in (3 to 51 mm): STS FX262, AW Cook Silatec.
       3. Repair of deteriorated concrete shall follow Section - 0 - Cast in Place Concrete Maintenance.
       4. Fill and seal all joints with polysufide joint sealant following the lining application.
          1. Joint Sealant: Polyspec Thiokol 2235, as needed with Sealant Primer.
       5. Prime, Minimum 8 mils dft: SherGlass FF Epoxy, B62-500 Series; Duraplate 5800.
       6. Finish, Minimum 8 mils dft: SherGlass FF Epoxy, B62-500 Series; Duraplate 5800.
    4. Epoxy Lining CR:
       1. Minimum total film thickness, 25 mils dft.
       2. Utilize epoxy fairing compound to fill pits, voids, or smooth surface irregularities.
          1. Filler and Surfacing Epoxy: Steel Seam FT910, as needed to fill voids or surface irregularities.
       3. Prime:
          1. Hold Prime, Minimum 2 mils dft: Macropoxy 5500, B58-740 Series Series.
       4. Finish, Minimum 25 mils dft: Duraplate 6100, B62-475 Series.
    5. Epoxy Lining CR: Concrete:
       1. Minimum total film thickness, 80 mils dft over mortar surfacing.
       2. Repair of deteriorated concrete shall follow Section 03 01 30 - Cast in Place Concrete Maintenance.
          1. Repair Filler and Microsilica Mortar 1/8 to 2 in (3 to 51 mm): STS FX262, AW Cook Silatec.
       3. New concrete surfaces shall be covered complete with epoxy mortar to a minimum of 1/16 (1.5 mm) to restore an even surface plain for subsequent coating system installation.
          1. Filler and Epoxy Mortar 1/16 to 1/4 in (1.5 to 6 mm): Duraplate 2300,
       4. Fill and seal all joints with polysufide joint sealant after installation of lining.
          1. Joint Sealant: Polyspec Thiokol 2235, as needed with Sealant Primer
       5. Finish, Minimum 80 mils dft: Duraplate 6100, B62-475 Series, 110 to 125 mils.
    6. Elastomeric Polyurethane Lining:
       1. Minimum total film thickness, 25 mils dft.
       2. Utilize epoxy fairing compound to fill pits, voids, or smooth surface irregularities.
          1. Filler and Surfacing Epoxy: Steel Seam FT910, as needed to fill voids or surface irregularities.
       3. Prime:
          1. Stripe Coat: Hold Prime, Minimum to Maximum 2 to 2.5 mils dft: Macropoxy 5500, B62-740 Series, 2 to 6 mils.
       4. Finish, Minimum 25 mils dft: Polycote 115.
    7. Elastomeric Polyurethane Lining: Concrete:
       1. Minimum total film thickness, 125 mils dft over mortar surfacing.
       2. Repair of deteriorated concrete shall follow Section 03 01 30 - Cast in Place Concrete Maintenance.
          1. Repair Filler and Microsilica Mortar 1/8 to 2 in (3 to 51 mm): STS FX262, AW Cook Silatec.
       3. New concrete surfaces shall be covered complete with epoxy mortar to a minimum of 1/16 (1.5 mm) to restore an even surface plain for subsequent coating system installation.
          1. Filler and Epoxy Mortar 1/16 to 1/4 in (1.5 to 6 mm): Duraplate 2300.
       4. Fill and seal all joints with polysufide joint sealant after installation of lining.
          1. Joint Sealant: Polyspec Thiokol 2235, as needed with Sealant Primer.
       5. Prime:
          1. Prime, Minimum 4 mils dft: Duraplate UHS or Corobond 100 or Corobond HS.
       6. Finish, Minimum 150 mils dft: Polycote 115.
    8. High Temperature and Pressure Resistant, Novolac Lining:
       1. Minimum total film thickness, 20 mils dft.
       2. Utilize epoxy fairing compound to fill pits, voids, or smooth surface irregularities.
          1. Filler and Surfacing Epoxy: Steel Seam FT910, as needed to fill voids or surface irregularities.
       3. Finish, Minimum 25 mils dft: Novaplate 325, B62-325 Series.
    9. Epoxy Lining: Potable Water:
       1. Minimum total film thickness, 20 mils dft.
       2. Utilize epoxy fairing compound to fill pits, voids, or smooth surface irregularities.
          1. Filler and Surfacing Epoxy: Steel Seam FT910, as needed to fill voids or surface irregularities.
       3. Primer:
          1. Stripe coat: Weld seams and irregular surfaces as specified: Macropoxy 5500, B58-740 Series 4 to 6 mils.
          2. Alternate stripe coat: Wet on wet over weld seams and irregular surfaces as specified. Sherplate PW, B62-260 Series.
       4. Finish, Minimum 20 mils dft: Sherplate PW, B62-260 Series.
    10. Epoxy Lining: Potable Water: Concrete:
        1. Minimum total film thickness, 30 mils dft.
        2. New concrete surfaces shall be covered complete with epoxy mortar to a minimum of 1/16 (1.5 mm) to restore an even surface plain for subsequent coating system installation.
        3. Repair of deteriorated concrete shall follow Section 03 01 30 - Cast in Place Concrete Maintenance.
        4. Fill and seal all joints with polysufide joint sealant.
           1. Joint Sealant: Polyspec Thiokol 2235, as needed with Sealant Primer.
        5. Prime:
           1. Filler and Epoxy Mortar 1/16 (1.5 mm): Duraplate 2300.
           2. Filler and Microsilica Mortar 1/8 to 2 in (3 to 51 mm): STS FX262, AW Cook Silatec.
        6. Finish, Minimum 30 mils dft: Sherplate PW, B62-260 Series.
    11. Methanol, Ethanol, Refined Fuels, Gasoline, Crude Oil, Hydrocarbon Resistant Lining:
        1. Minimum total film thickness, 20 mils dft.
        2. Utilize epoxy fairing compound to fill pits, voids, or smooth surface irregularities.
           1. Filler and Surfacing Epoxy: Steel Seam FT910, as needed to fill voids or surface irregularities.
        3. Phenolic Epoxy Lining:
           1. Prime: Minimum dft, 5 mils: Phenicon HS.
           2. Intermediate: Minimum dft, 5 mils: Phenicon HS.
           3. Finish: Minimum dft, 5 mils: Phenicon HS.
        4. Bis F Epoxy Lining:
           1. Finish: Minimum dft, 20 mils: Fast Clad 105ER, B62-105 Series.
    12. Acid Resistant Vinyl Ester Lining:
        1. Minimum total film thickness, 20 mils dft.
        2. Utilize epoxy fairing compound to fill pits, voids, or smooth surface irregularities.
           1. Filler and Surfacing Epoxy: Polyglass Putty, as needed to fill voids or surface irregularities.
        3. Prime, Minimum 3 mils dft: Corobond Vinyl Ester Primer.
        4. Intermediate, Minimum 15 mils dft: Cor Cote VEN FF.
        5. Finish, Minimum 15 mils dft: Cor Cote VEN FF.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required,

* 1. FLOOR COATING SYSTEMS

\*\* NOTE TO SPECIFIER \*\* Refer to installation details at http://www.generalpolymers.com/arch\_detail .html. Delete paragraphs not required.

* + 1. Construction details for terminations such as control joints, expansion joints, drains, shall submit for approval. Standard CAD design detail drawings shall be followed for all installed resinous floor systems.
       1. Install resinous floor in accordance with manufacturer's published details.
    2. Industrial Epoxy, Chemical Resistant Novolac Epoxy Finish:
       1. Minimum System Total dft, 25 mils.
       2. For non-skid applications, include the broadcast of silica sand into the wet film of the primer. Silica sand broadcast shall be even in consistency and texture when top coated with appropriate materials.
       3. Prepare and fill all expansion joints with joint sealant.
          1. Joint Sealant: Polyspec Thiokol 2235 Polysulfide, as needed
       4. Treat and fill control joints.
          1. Filler and Surfacing Epoxy: GP3561, with aggregate as needed to fill damaged pits. Utilize Flexible epoxy and fiberglass scrim.
       5. Prime:
          1. Prime, Minimum 6 mils dft: Existing: GP3504 High Solids Epoxy Primer.
          2. Prime, Minimum 6 mils dft: New: GP3579 Standard Primer.
       6. Broadcast: 16 - 30 mesh clean silica sand into wet film of primer.
       7. Intermediate, Minimum 8 mils dft: Grout Coat, GP3741 Novo Flo Self Leveling Epoxy.
       8. Finish, Minimum 10 mils dft: GP3741Novo Flo Self Leveling Epoxy, 10 to 20 mils.
    3. Industrial Epoxy, Polyurethane Finish:
       1. Minimum System Total dft, 25 mils.
       2. For light duty applications, omit the epoxy intermediate coat. Submit all proposed light duty systems with special note identifying proposed areas for use.
       3. For non-skid applications, include the broadcast of silica sand into the wet film of the primer. Silica sand broadcast shall be even in consistency and texture when top coated with appropriate materials.
       4. Prepare and fill all expansion joints with joint sealant.
          1. Joint Sealant: Polyspec Thiokol 2235 Polysulfide, as needed.
       5. Treat and fill control joints, surface imperfections:
          1. Filler and Surfacing Epoxy: GP3561, with aggregate as needed to fill damaged pits.
          2. Utilize Flexible epoxy and fiberglass scrim.
       6. Prime:
          1. Prime, Minimum 4 mils dft: Existing: GP3504 High Solids Epoxy Primer.
          2. Prime, Minimum 6 mils dft: New: GP3579 Standard Primer.
       7. Broadcast: Option: Evenly broadcast 60-40 blended mesh silica sand into the wet film of the primer.
       8. Intermediate, Minimum 3 mils dft: GP4638 HS Polyurethane.
       9. Finish, Minimum 3 mils dft: GP4638 HS Polyurethane.
    4. Industrial Urethane Slurry Mortar, Novolac Epoxy Finish, 3/16 in (4.7 mm) minimum thickness.
       1. Minimum System Total dft, 20 mils novolac seal coat over urethane cement mortar.
       2. Non-skid applications, include the broadcast of silica sand into the wet film of the urethane cement slurry to refusal.
       3. Prepare and fill all expansion joints with joint sealant:
          1. Joint Sealant: Polyspec Thiokol 2235 Polysulfide, as needed.
       4. Treat and fill control joints, surface imperfections:
          1. Filler and Surfacing Epoxy: GP3561, with aggregate as needed to fill damaged pits.
          2. Utilize Flexible epoxy and fiberglass scrim.
       5. Prime:
          1. Prime, Minimum 2 mils dft: New: GP3477 WB Epoxy Prime.
       6. Intermediate, Minimum 3/16 in (4.7 mm) dft: Urethane Slurry: GP Fastop 12S.
       7. Finish, Minimum 18 mils dft: GP3741 NovoFlo Novolac Epoxy.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. SECONDARY CONTAINMENT COATING SYSTEMS

\*\* NOTE TO SPECIFIER \*\* Delete paragraph not required.

* + 1. Novolac Epoxy Coating for horizontal surfaces for foot traffic.
       1. Minimum System Total dft 35 mils flake filled novolac coating.
       2. Install epoxy mortar on all vertical cast in place concrete surfaces after acceptable concrete surface profile is achieved. Fill and cover all surfaces with epoxy mortar to 1/16 (1.5 mm) to restore surface plane. Completely fill voids and bug holes.
          1. Filler and Epoxy Mortar 1/16 (1.5 mm): Duraplate 2300.
       3. Treat and fill all expansion joints, control joints with polysulfide sealant after installation of the lining system.
          1. Joint Sealant: Polyspec Thiokol 2235, as needed.
       4. Prime:
          1. Prime, Minimum 4 mils dft: Existing, Metals, PVC: Macropoxy 646 Epoxy, B58-600 Series.
          2. Prime, Minimum 4 mils dft: Concrete, CMU: Corobond 100 Epoxy Primer, B58-5100 Series.
       5. Finish Coat 1, Minimum 15 mils dft: Cor Cote HCR FF Novolac Epoxy, B62 Series, 15 to 20 mils.
       6. Finish Coat 2, Minimum 15 mils dft: Cor Cote HCR FF Novolac Epoxy, B62 Series, 15 to 20 mils
    2. Novolac Epoxy Reinforced for horizontal surfaces where vehicular or heavy forklift traffic occurs.
       1. Minimum System Total dft, 115 mils novolac laminate reinforced and flake filled seal coat.
       2. Install epoxy mortar on all vertical cast in place concrete surfaces after acceptable concrete surface profile is achieved. Fill and cover all surfaces with epoxy mortar to 1/16 (1.5 mm) to restore surface plane. Completely fill voids and bug holes.
          1. Filler and Epoxy Mortar 1/16 (1.5 mm): Duraplate 2300.
       3. Treat and fill all expansion joints, control joints with polysulfide sealant after installation of the lining system.
          1. Joint Sealant: Polyspec Thiokol 2235, as needed.
       4. Prime:
          1. Prime, Minimum 4 mils dft: Existing, Metals, PVC: Macropoxy 646 Epoxy, B58-600 Series.
          2. Prime, Minimum 4 mils dft: Concrete, CMU: Corobond 100 Epoxy Primer, B58-5100 Series.
       5. Laminate Coat, Minimum 20 mils dft: Cor Cote HCR, B62-420 Series with 1.5 ounce fiberglass mat; 20 to 30 mils.
       6. Finish Coat 1, Minimum 15 mils dft: Cor Cote HCR FF Novolac Epoxy, B62-425 Series, 15 to 20 mils.
       7. Finish Coat 2, Minimum 15 mils dft: Cor Cote HCR FF Novolac Epoxy, B62-425 Series, 15 to 20 mils.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. HIGH TEMPERATURE COATING SYSTEMS

\*\* NOTE TO SPECIFIER \*\* Delete paragraphs not required.

* + 1. Silicone Acrylic to 500F:
       1. Prime Coat, 2-2.5 mils dft: Heat Flex Hi-Temp 500.
       2. Finish, 2-2.5 mils dft: Heat Flex Hi-Temp 500
    2. Silicone to 425 - 1200F:
       1. Prime Coat, 5-6 mils dft: Heat-Flex Hi-Temp 1200.
       2. Finish, 1.5-2 mils dft: Heat Flex Hi-Temp 1000.
    3. Under Insulation Coating ambient to 350F:
       1. Epoxy Novolac Option: Minimum 7 mils dft.
          1. B62: 7 to 9 mils.
       2. Single Component Polymeric Resin Option: Minimum 10 mils dft.
          1. Prime Coat: 5-6 mils dft: Heat-Flex Hi-Temp 1200.
          2. Finish: 5-6 mils dft: Heat-Flex Hi-Temp 1200

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. WATERPROOFING SEALING COATING SYSTEMS

\*\* NOTE TO SPECIFIER \*\* Delete paragraphs not required.

* + 1. Semi Transparent Stain Sealer:
       1. Prime Coat: Loxon Concrete Vertical Stain.
       2. Finish Coat: Loxon Concrete Vertical Stain.
    2. Clear Silane Based Sealer:
       1. Prime Coat: Loxon 40 percent Silane.
       2. Finish Coat: Loxon 40 percent Silane.
    3. Elastomeric Waterproofing:
       1. Prime Coat, Minimum 8 mils dft: Loxon XP,A24 Series.
       2. Finish Coat, Minimum 8 mils dft: Loxon XP, A24 Series.
    4. Coal Tar Epoxy:
       1. Prime Coat, Minimum 8 mils dft: Targuard Coal Tar Epoxy, B69-60/65 Series.
       2. Finish Coat, Minimum 8 mils dft: Targuard Coal Tar Epoxy, B69-60/65 Series.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. CHEMICAL STAIN RESISTANT INDUSTRIAL WALL SYSTEM
     1. Chemical Stain Resistant Industrial Wall System: General Polymers SaniGlaze Wall System with GP4685W Polycote Urethane Finish.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. ANTIGRAFFITI POLYURETHANE SYSTEM
     1. Antigraffitti Polyurethane System:
        1. Prime: Specified System.
        2. Finish, Minimum 2.5 mils dft: 2K WB Antigraffitti Polyurethane.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. EPOXY ALUMINUM ISOLATION SYSTEM
     1. Epoxy Aluminum Isolation System:
        1. Prime Coat, Minimum 7 mils dft: Macropoxy 646, B58-600 Series.
        2. Finish Coat, Minimum 7 mils dft: Macropoxy 646, B58-600 Series.

1. EXECUTION
   1. EXAMINATION
      1. Examine all substrates and conditions, with contractor, Engineering representative present for compliance with requirements for maximum moisture content, surface soundness, and other conditions affecting the performance of the Work.
         1. Moisture content of concrete, masonry, wood, and gypsum board substrates should be appropriately tested using current technology moisture meter equipment. Moisture levels should comply with manufacturers' requirement.
         2. Plaster, Concrete, CMU Joint mortar, and all other curable materials shall have full cure properly tested for and confirmed.
      2. Do not begin application of coatings until substrates have been properly prepared, examined, and conditions properly reported. Notify Architect of unsatisfactory conditions or areas where specified surface preparation cannot be achieved.
      3. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation. Proceed with work only after conditions have been corrected, and approved by all parties, otherwise application of coatings will be considered as an acceptance of surface conditions. Beginning coating application constitutes contractors acceptance of substrate and conditions.
      4. Identify all shop primed items and previously painted surfaces and provide preparation procedures for review and approval.
   2. SURFACE PREPARATION:
      1. General:
         1. The surface must be dry and in sound condition. Remove oil, dust, dirt, loose rust, peeling paint or other contamination to ensure good adhesion.
            1. Remove incompatible primers and prime substrate with compatible primers or apply a tie coat as required to product the coating system indicated.
            2. Previously coated, existing surfaces shall be identified and existing coating type confirmed. In the event that the existing coating cannot be confirmed consult with the manufacturer and submit tie coat alternative solutions.
         2. Follow all surface preparation guidelines for new construction. In the event of a discrepancy consider the more effective surface preparation as the default method.
         3. Verify that the atmospheric conditions are within the acceptable temperature, humidity and sun exposure limits.
            1. Dehumidification must be utilized in the event that atmospheric conditions cannot be maintained.
         4. Adhere to manufacturer's recoat time surface preparation requirements.
            1. Surfaces exhibiting rust bloom, moisture weeping, or any other deleterious condition shall be sufficient repaired prior to the application of coating or lining system. Repair methods include necessary mean to meet original specification requirements, including abrasive blasting as needed.
         5. Remove any residual dusting or light surface contamination from prepared surfaces prior to the application of the coating system.
         6. Protect all surfaces not being coated from any damage due to surface preparation work process.
         7. Paint all inaccessible items before being assembled.
         8. Remove mildew before painting by washing with a solution of 1 part liquid household bleach and 3 parts of warm water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with clean water and allow the surface to dry 48 hours before painting. Wear protective glasses or goggles, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach and water solution.
         9. Install coating systems to only properly prepared surfaces.
      2. Abrasive Blast Cleaning:
         1. Blast cleaned surfaces shall match the standard samples available from the NACE Standard TM-01-70, Visual Standard for Surfaces of New Steel Air Blast Cleaned with Sand Abrasive and TM-01-75, Visual Standard for Surfaces of New Steel Centrifugally Blast Cleaned with Steel Grit.
         2. Remove all oil, grease, welding fluxes, and other surface contaminants by solvent cleaning per SSPC-SP1prior to any mechanical surface preparation.
         3. Sharp edges shall be rounded or chamfered, and burrs and surface defects and weld splatter shall be ground smooth prior to blast cleaning in accordance with NACE SP0178-07, Design, Fabrication, and surface Finish Practices for Tanks and Vessels to Be Lined for Immersion Service.
         4. The type and size of abrasive shall be selected to produce a surface profile that meets the coating manufacturer's recommendation of the particular product and service conditions. Abrasives for submerged and severe service coating systems shall be clean, hard, sharp cutting crushed slag. Metal shot or grit shall not be used for surfaces in submerged services.
         5. Abrasive shall not be reused unless an automated lasting system is used for surfaces that will be in non-submerged service. For automated blasting systems, clean, oil free abrasives shall be maintained. The abrasive mix shall include at least 50 percent grit.
         6. Compressed air for blast cleaning shall be supplied at adequate pressure from well-maintained compressors equipped with oil and moisture separators that remove at least 98 percent of the contaminates.
      3. Steel Tanks and Reservoirs:
         1. All lap roof plate edges, both sides, shall be pre-coated. If necessary, primer exposed on exterior of roof may be removed prior to welding. Percolating shall extend at least 4 inches from the plate edges.
         2. Touch up coating shall be done for areas damaged during erection areas not percolated. The contractor shall spot abrasive blast to SSPC-SP5, White Metal Cleaning Standard, before application of coating. Materials.
         3. Curing Period:
            1. Prior to immersion, the completed system shall be subjected to at least seven (7) of curing time with the metal temperature at a minimum of 70 degrees F ( C) in accordance with manufacturer recommendations. Both conditions shall maintain a maximum relative humidity of 50 percent and under forced ventilation conditions that supply sufficient air changes to fully evacuate vapors and fumes from newly installed coatings. Plural component applied lining systems shall be cured for a minimum of 48 hours utilizing the same forced ventilation conditions.
         4. Decontamination of potable water storage tanks.
            1. Clean all interior surfaces of new potable water tanks prior to placing in service with chlorine solution using processes defined by AWWA C651-05.
         5. Volatile Organic Compound Testing of potable water storage tanks.
            1. The completed interior reservoir coating system shall be tested for volatile organic compounds. VOC extraction result must be below CPDH RDL for each volatile listed.
      4. Concrete Surface Preparation for Architectural Environment:
         1. Walls and Ceilings, Poured Concrete, Precast Concrete, Unglazed Brick, Cement Board, Tilt-Up, Cast-In-Place) including Plaster walls, ceilings.
         2. Remove release agents, curing compounds, efflorescence, and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in the manufacturers' written instructions.
         3. Utilize pressure washing, or other suitable dry mechanical means per SSPC-SP13 to provide a sufficiently clean and prepared surface.
         4. Final surfaces should provide acceptable moisture levels and surface profile prior to application of the coating system. Fill all bugholes, voids to provide an even surface for painting.
      5. Concrete Surface Preparation for Exposed, Corrosive Environment:
         1. Walls and Ceilings, Floors, Secondary Containment, Poured Concrete, Precast Concrete, Unglazed Brick, Cement Board, Tilt-Up, Cast-In-Place) including Plaster walls, ceilings.
         2. Remove release agents, curing compounds, efflorescence, and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in the manufacturers' written instructions.
         3. Utilize abrasive blasting other suitable dry mechanical means per SSPC-SP13 to provide a sufficiently clean, profiled, and prepared surface.
         4. Final surface profile should meet ICRI 310, 2, CSP 2 to 4.
         5. Fill all bug holes, honeycombs, cracks, with surface fillers as approved by the coating manufacturer.
         6. Final surfaces should provide acceptable moisture levels and surface profile prior to application of the coating system.
      6. Concrete Surface Preparation for Submerged, Partially, Intermittently Submerged, Immersion Environment:
         1. Walls and Ceilings, Poured Concrete, Precast Concrete, Tilt-Up, Cast-In-Place.
         2. Remove release agents, curing compounds, efflorescence, and chalk.
         3. Verify that the pH of the cleaned and prepared concrete surfaces to be coated is within the range of to 9 to 11. Application of coating materials outside this range will not be permitted without written approval from the Engineer. ASTM D 4262 should be used to determine ph.
         4. Test concrete for moisture following the 28 day curing period in accordance with ASTM D4263 or F1869. Test results shall be reviewed by the coating manufacturer's technical representative to determine if any special treatments are required prior to the application of coating.
         5. Utilize abrasive blasting other suitable dry mechanical means per SSPC-SP13 to provide a sufficiently clean, profiled, and prepared surface.
         6. Final surface profile should meet ICRI 310, 2, CSP 4 to 6.
         7. Fill all bug holes, honeycombs, cracks, with surface fillers as approved by the coating manufacturer.
         8. Repair corroded, deteriorated concrete surfaces per Section 03 01 30 - Concrete Cast in Place Maintenance.
         9. Final surfaces should provide acceptable moisture levels and surface profile prior to application of the coating system.
      7. Concrete Surface Preparation for Resinous Floors:
         1. Remove release agents, curing compounds, efflorescence, and chalk. Utilize abrasive blasting other suitable dry mechanical means per SSPC-SP13 to provide a sufficiently clean, profiled, and prepared surface.
         2. Final surface profile should meet ICRI 310, 2, CSP 1 - 5. Provide acceptable Concrete Surface Profile as defined by ICRI 310.2 to match the film thickness of the installed resinous floor system.
         3. Fill all bug holes, honeycombs, cracks, with surface fillers as approved by the coating manufacturer.
         4. Final surfaces should provide acceptable moisture levels and surface profile prior to application of the coating system.
         5. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in the manufacturers' written instructions.
      8. CMU, Masonry, Stucco Surfaces Preparation for Architectural Environments:
         1. CMU - Concrete, Split Face, Scored, Smooth, High/Low Density, Fluted.
         2. Remove release agents, curing compounds, efflorescence, and chalk. Do not coat surfaces if the moisture content or alkalinity of the surface or mortar joints exceeds that permitted in the manufacturer's written instructions.
         3. Utilize pressure washing, or other suitable mechanical means per SSPC-SP13 to provide a sufficiently clean and prepared surface.
         4. Fill all bug holes, honeycombs, cracks, with surface fillers as approved by the coating manufacturer.
      9. CMU, Masonry Substrate Surface Preparation for Corrosive, Below Grade Environment:
         1. CMU - Concrete, Split Face, Scored, Smooth, HighandLow Density, Fluted/
         2. Remove release agents, curing compounds, efflorescence, and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in the manufacturer's written instructions.
         3. Utilize abrasive blasting other suitable dry mechanical means per SSPC-SP13 to provide a sufficiently clean, profiled, and prepared surface.
         4. Final surface profile should meet ICRI 310, 2, CSP 1 - 3.
         5. Fill all bug holes, honeycombs, cracks, with surface fillers as approved by the coating manufacturer.
      10. Ferrous Metal Surface Preparation in Architectural Environment:
          1. Hollow Metal, Miscellaneous Ornamental Iron, Trim/
             1. Clean in accordance with SSPC SP1 and in accordance with hollow metal manufacturer.
             2. Shop primed items shall be sufficiently abraded with sandpaper prior to coating system application.
             3. Exposed metal shall be cleaned per SSPC-SP15, Machine Tool Cleaning to Commercial Standard.
          2. Structural Steel Columns, Joists, Trusses, Beams: New, Corrosive Environment:
             1. Clean in accordance with SSPC-SP1, Solvent Cleaning.
             2. Abrasive blast clean all surfaces per SSPC-SP6.
          3. Apply primer to blasted substrate using the most stringent method, within 4 hours of blast cleaning or prior to rust blooming.
      11. Ferrous Metal Surface Preparation for Immersion, Under Insulation, Secondary Containment, Corrosive Environment:
          1. Structural Steel Columns, Joists, Trusses, Beams, Piping, Mechanical Items
          2. Clean in accordance with SSPC-SP1, Solvent Cleaning.
          3. Abrasive blast clean all surfaces per SSPC-SP10, Near White Metal Standard, 2 to 4 mil profile.
          4. Prepare welds and remove weld spatter and imperfections in accordance with SP0178 - Design, Fabrication, and Surface Finish Practices for Tanks and Vessels to be lined for immersion service.
          5. Apply appropriate primer to blasted substrate using the most stringent of the following; within 4 hours of blast cleaning or prior to rust blooming. Extensions to these criteria may be provided when environmental controls are properly established and functioning.
      12. Galvanized Metal Surface Preparation for Architectural Environment:
          1. Clean surfaces with etching cleanser or mechanical scarification to remove temporary passivation layers and create sufficient profile for metal primers.
          2. Confirm removal of all temporary passivation layers using copper sulfate solution and the methods defined in SSPC-SP16.
          3. If temporary passivation layer remain intact, remove using consistent abrading with sandpaper or abrasive brush blasting per SSPC-SP-16.
      13. Galvanized Metal Surface Preparation for Corrosive Environment:
          1. Clean surfaces using abrasive brush blast cleaning per SSPC-SP16 to remove temporary passivation layers and create sufficient profile for metal primers. Surface profile to meet 0.75 to 1.5 mil profile.
          2. Confirm removal of all temporary passivation layers using copper sulfate solution and the methods defined in SSPC-SP16.
      14. Non-Ferrous, Aluminum, Stainless Steel Surface Preparation for Architectural Environment:
          1. Clean surfaces with biodegradable removing cleanser to remove oxidation layer from surface per SSPC-SP1.
          2. Abrade surfaces complete with 200 grit sandpaper.
      15. Non-Ferrous, Aluminum, Stainless Steel Surface Preparation for Immersion or In Contact with Concrete:
          1. Immersion: Clean surfaces with biodegradable removing cleanser to remove oxidation layer from surface per SSPC-SP1.Abrasive brush blast clean surfaces per SSPC-SP16. Surface profile 2 to 4 mils.
          2. In contact with concrete: Clean surfaces with biodegradable removing cleanser to remove oxidation layer from surface per SSPC-SP1. Abrasive brush blast clean surfaces per SSPC-SP16. Surface profile 1.5 to 2 mils.
      16. Ductile Iron Metal Surface Preparation:
          1. Immersion, submerged, partially submerged, buried, or partially buried
          2. Clean in accordance with SSPC-SP1, Solvent cleaning.
          3. Abrasive blast cleaned per NAPF 500-03-04 and NAPF 500-03-05 guidelines.
      17. PVC, CPVC, Fiberglass Surface Preparation:
          1. Clean surfaces with biodegradable removing cleanser to remove oxidation layer from surface per SSPC-SP1.
          2. Abrade surfaces complete with 100 - 200 grit sandpaper. Final surfaces will be completely dulled.
      18. Existing or Previously Coated Surface Preparation:
          1. Clean all previously coated surfaces to remove dirt, greases, solutions, and any foreign contaminants per SSPC-SP1. Cleaning agent shall be biodegradable, highly concentrated, water reducible, alkaline detergent blend. Cleaned surfaces shall be properly rinsed to remove all cleaners and contaminants.
          2. Previously coated, existing painted surfaces shall be thoroughly and completely abraded. Existing coatings shall be sufficiently deglossed and profiled for application of prime coats.
          3. Exposed or corroded substrates shall be mechanically cleaned to remove all corrosion or deteriorated material. Surface preparation requirements of corresponding deteriorated exposed substrate shall be achieved according to original substrate surface preparation for architectural or high performance coatings.
          4. Sand and feather edge a smooth transition from existing coatings and exposed substrate such that damaged area are not visible from a distance of two (2) feet.
          5. Final surface preparation for existing coatings and deteriorated substrates shall provide intact, tightly adherent coatings, cleaned substrate, dull, and dry.
      19. Shop Primed Surfaces Surface Preparation for Field Applied Finishes:
          1. All shop primed shall be prepared according to following requirements.
          2. Clean all previously coated surfaces to remove dirt, greases, solutions, and any foreign contaminants per SSPC-SP1.Cleaning agent shall be biodegradable, highly concentrated, water reducible, alkaline detergent blend. Cleaned surfaces shall be properly rinsed to remove all cleaners and contaminants.
          3. Shop applied primers shall be abraded as needed following cleaning per SSPC-SP1.Overcoating of shop applied epoxy primers shall be within the shop applied manufacturers published recoat parameters. Provide written confirmation of compatibility, timing, and procedure for overcoating from manufacturer.
          4. Exposed or corroded substrates shall be mechanically cleaned to remove all corrosion or deteriorated material. Surface preparation requirements of corresponding deteriorated exposed substrate shall be achieved according to original substrate surface preparation for architectural or high performance coatings.
          5. Sand and feather edge a smooth transition from existing coatings and exposed substrate such that damaged area are not visible from a distance of two (2) feet.
          6. Final surface preparation for existing coatings and deteriorated substrates shall provide intact, tightly adherent coatings, cleaned substrate, dull, and dry.
          7. Prime coat used in over coating existing material must be suitable for the intended use and provide adequate adhesion to the existing material.
          8. Over coating existing coating systems for immersion or submerged conditions shall be made in strict accordance with the coating manufacturer's printed instructions. Coating manufacturer will provide in writing specific steps required to achieve proper adhesion and performance of overcoat system.
   3. INSTALLATION
      1. General Requirements:
         1. Apply all coatings and materials according to the finish schedule.
         2. Apply all coatings and materials with manufacture specifications in mind. Apply coatings by brush, roller, or spray equipment unless otherwise directed by the manufacturer.
         3. Mix and thin coatings according to manufacture recommendation.
         4. Do not apply to wet or damp surfaces.
         5. Wait at least 30 days before applying to new concrete or masonry. Or follow manufacturer's procedures to apply appropriate coatings prior to 30 days. Test new concrete for moisture content. Proceed only when moisture content meets coating manufacturer's requirement.
         6. Wait until wood is fully dry after rain, fog or dew. Proceed only when moisture content meets coating manufacturer's requirement.
         7. Uniformly apply coatings without runs, drips, or sags, without brush marks, and with consistent sheen in accordance with SSPC-PA1.Regardless of number of coats specified, apply as many coats as necessary for complete hide, uniform appearance, and achieving the required dry film thickness. Final film of coatings shall have no visible, drips, overspray, dry spray, runs, ridges, sags, holidays, dry lap or brush marks.
         8. Inspection: The coated surface must be inspected and approved by the Architect or Engineer.
         9. Plural component spray applied equipment shall be properly inspected and in working condition prior to the application of materials.
            1. All gauges, valves, pistons, and working parts shall be in proper working order.
            2. Coating materials stored in drums shall be premixed and heated prior to the application of the coating.
            3. Perform successful a ratio check of spray material prior application of coating.
            4. All equipment settings and requirements for proper application including but not limited to pressures, volumes, mix ratio settings, shall be in proper working order and closely monitored during application.
            5. Sample spray application of specific material shall be applied to "sample cards" just prior to the application of plural applied material. Supply sample cards from previous day's application with proper date and time markings to Engineer for verification of cured material.
         10. Stripe coats shall be applied to all welds, edges, nuts, bolts, difficult to reach areas.
             1. Stripe coats shall be applied directly to properly prepared surface prior to spray application of primers.
             2. Stripe coats shall also be applied directly to primed surface prior to spray application of the intermediate coats for multi-coat immersion or submerged applications.
             3. Stripe coat material shall be the same or separately approved material compatible with the material used for spray application of any given coat.
         11. Spray application shall be performed when conditions, environments, and permitting allow.
             1. Use only spray equipment approved by the manufacturer for the specific coat of material.
         12. Multiple coat applications shall be installed according to the manufacturers printed requirements.
             1. Coats of material shall be sufficiently dry prior to the application of a subsequent coat in a coating system.
             2. Do not allow excessive drying time to pass which will inhibit or reduce the inter-coat adhesion of the multiple coat system.
             3. If recoat requirements have been exceeded, brush blast or scarify prior coat according to the manufacturers requirement. Provide written confirmation of repair process from manufacturer.
             4. Remove any dust or foreign contamination from previous coat prior to applying the next coat in a multi coat system.
         13. Apply no coating when surrounding air temperature of surface to be coated is below minimum temperature allowed by manufacturer's recommendations for coating application or when it is expected that air temperature will drop below minimum 8 hours after coating application.
         14. Apply no coating when surrounding air temperature is forecasted to be less than 5 degrees F ( C) above dew point within 8 hours after coating application.
         15. Apply no coating to steel which is 5 degrees F ( C) below air temperature or which is at a temperature over 115 degrees F ( C), nor shall coating be applied to steel which is at a temperature that will cause blistering or porosity or otherwise will be detrimental to the life of the coating.
         16. No coating shall be applied to wet or damp surfaces or in rain, snow, fog, or mist. Coating shall not be applied on frosted or ice-coated surfaces.
         17. Dew point shall be measured by use of an instrument such as a Sling Psychrometer in conjunction with U.S. Department of Commerce Weather Bureau Psychometric Tables or equivalent.
         18. The coated surface must be inspected after application of individual coats within the multi coat system and after completion of the system. Applied systems must be approved by the Architect or Engineer.
      2. Curing Requirements:
         1. Maintain adequate environmental conditions and ventilation during drying and curing of applied coating systems.
         2. Allow all primer and intermediate coats to sufficiently dry prior to the application of subsequent coat of material.
         3. Coating systems to be placed into immersion service shall cure under the proper conditions as stated by the manufacturer for the full curing time requirement. Deviations from the proper conditions shall be quickly resolved by the contractor and the methods used shall be confirmed by the manufacturer.
         4. All applied coatings shall be properly and completely cured prior to being place into their intended service.
      3. Shop Application:
         1. All structural steel members, steel plate, or other manufactured items may be prepared and coated in a fixed location.
         2. Shop application of prime coat shall be completed only when specified surface preparation has been achieve for the substrate. Apply all primers within 4 hours of completion of surface preparation. Ferrous metal shall not be primed if rust bloom is present.
         3. Field repair any damaged shop primer, intermediate or finish coats in accordance with the preparation requirements for the given substrate. Apply repair primer, intermediate, and finish coats as required to replace damage materials and restore damaged areas equal to surface before damage.
         4. Equipment:
            1. Unless otherwise indicated, items of equipment or parts of equipment which are not submerged in service shall be shop primed and the finish coated in the field after installation with the indicated or selected color. The methods, materials, application equipment, and other details of shop painting shall comply with this section. If the shop primer requires top coating within in a specific period of time, the equipment shall be finish coated in the shop and then touched up after installation.
            2. Items of equipment or parts and surfaces of equipment which are submerged or inside an enclosed hydraulic structure when in service, with the exception of pumps and valves, shall have surface preparation and coating performed in the field.
            3. For certain pieces of equipment it may be undesirable or impractical to apply finish coatings in the field. Such equipment may include engine generator sets, equipment such as electrical control panels, switchgear or main control boards, submerged parts of pumps, ferrous metal passages in valves, or other items where it is not possible to obtain the indicated quality in the field. Such equipment shall be primed and finish-coated in the shop and touched up in the field with the identical material after installation. The contractor shall require the manufacturer of each such piece of equipment to certify as part of its Shop Drawings that the surface preparation is in accordance with these specifications. The coating material data sheet shall be submitted with the Shop Drawings for the equipment.
            4. For certain small pieces of equipment the manufacturer may have a standard coating system that is suitable for the intended service conditions. In such cases, the final determination of suitability will be made during review of the Shop Drawing submittals. Equipment of this type generally includes only indoor equipment such as instruments, small compressors, and chemical metering pumps.
            5. Shop painted surfaces shall be protected during shipment and handling by suitable provisions including padding, blocking, and the use of canvas or nylon slings. Primed surfaces shall not be exposed to the weather for more than 2 months before being top coated or less time if recommended by the coating manufacturer.
      4. Prime Coat Application:
         1. Prime all surfaces to be painted.
         2. Prime and finish all surfaces that will be inaccessible after installation.
         3. Back prime all wood substrates with two coats of approved primer prior to installation.
         4. Primed substrate shall be of consistent film thickness and coverage to meet the specification.
         5. Provide proper environmental conditions for curing of prime coat.
      5. Finish Coat Application:
         1. Apply all intermediate and finish coats to properly primed substrates within the recoat requirements and according to the product data sheet of the manufacturer.
         2. Apply contrasting colors for distinguishing between intermediate and finish coats.
         3. Field applied intermediate and finish coats shall be applied to shop primed substrates only within sufficient adhesion can be obtained. When required, thoroughly and completely abrade existing primers and apply a subsequent tie coat of approved primer will be applied to the abraded shop primer.
   4. QUALITY CONTROL
      1. In general the contractor will maintain appropriate and measurable quality control activities that ensure successful installation of the coating systems.
      2. Measure all dry film thickness readings as defined in SSPC-PA2.
      3. Apply all coatings using methods defined in SSPC-PA1.
      4. Perform all stripe coating using methods defined in SSPC-PA 11.
      5. Maintain and provide to Engineer copies of daily records of contractor activity while performing work on the project. Daily record information should include but is not limited to the following.
         1. Site foreman responsible for day's activities.
         2. Work hours. Start and finish times.
         3. Crew members.
         4. Atmospheric measurements during exterior work should include evenly sequenced measurements of general weather condition, wind speed, air temperature, and relative humidity.
         5. Atmospheric measurements during high performance coating application particularly submerged or immersion items should include evenly sequenced measurements of general weather condition, wind speed, air temperature, and relative humidity during all surface preparation, application, and curing of applied systems.
         6. Substrate temperatures at the time of application and completion of the application.
         7. Measure wet film of applied coating using wet film thickness gauges.
         8. Detailed record of start and finish times of activities performed on a given space.
      6. Maintain accurate quality control records of applied coating systems.
         1. Record accurate dry film thickness readings in accordance with SSPC-PA 2.
      7. Supply daily reports on a timely basis to the supervising Engineer.
   5. PROTECTION
      1. Protect finished coatings from damage until completion of project.
         1. Applied coatings shall not be placed into service until properly cured.
         2. Maintain acceptable environmental conditions for proper curing of the applied coating system.
      2. Touch-up damaged coatings after substantial completion, following manufacturer's recommendation for touch up or repair of damaged coatings. Repair any defects that will hinder the performance of the coatings.
   6. FINISH LEGEND
      1. General:
         1. All items not specifically listed in the finish legend shall receive a coating system consistent with corrosive atmosphere or submerged coating schedule by the corresponding substrate and service environment as shown on the plans and drawings.
         2. Any discrepancy in the drawings or finish legend Section 3.8 will default to the high performance coating system as shown per substrate, intended service environment and the corresponding surface preparation requirements.
         3. All substrates shall require finish painting unless specifically noted otherwise.
      2. General:
         1. All items not specifically listed in the schedule shall receive a coating system consistent with corrosive atmosphere or submerged coating schedule and the corresponding substrate as shown.
         2. Any discrepancy in the drawings will default to the corrosive atmosphere or submerged Schedule of Painted Surfaces.
      3. Pipe Identification:
         1. Identification of piping shall be in accordance with Section - 1, Piping Identification Systems.
         2. Unburied pipes in structures and in chemical pipe trenches shall be color-code painted. Colors shall be as selected by the Engineer or as indicated.
         3. Unburied chemical pipes, including chemical pipes in structures and chemical pipe trenches, shall be color-code painted. Colors shall be as selected by the Engineer or as indicated.
      4. All substrates shall require finish painting unless specifically noted otherwise.

END OF SECTION