# SECTION 099665 – HIGH-PERFORMANCE COATINGS

## PART 1 GENERAL

### 1.1 SECTION INCLUDES

A. Industrial protective and marine coatings and surface preparation for the following coating systems:

1. Seamless high-performance polyurethane coating systems.
2. Epoxy coating systems.

### 1.2 SUMMARY

A. 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.

1. Miscellaneous ferrous metal.
2. Structural steel.
3. Concrete Walls and Floors.
4. CMU Walls.

B. 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. Machined surfaces.
6. Stainless steel items.
7. Prefinished metal such as Kynar coated.

C. Related Requirements:

1. Section 033000 – "Cast-in-Place Concrete" for coatings on cast-in-place substrate.
2. Section 042200 – "Concrete Unit Masonry" for coatings applied on concrete unit masonry substrates.
3. Section 055000 – "Metal Fabrications" for coatings applied on metal substrates.

### 1.3 DEFINITIONS

A. Definitions:

1. Contractor is the party or persons directly contracted or subcontracted through a third party to perform the work described herein.
2. Architect is the supervising Architect of record.
3. Owner is the facility Owner.
4. Manufacturer is the materials supplier.

B. 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.

C. Service Condition Identification:

1. A: Atmospheric: Any metal or concrete surface, indoors or outdoors that is exposed to view.
2. 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.
3. ND: Normally Dry: Substrate is exposed to moisture from environmental conditions but remains dry more than 85 percent of its service life.
4. NW: Normally Wet: Substrate is exposed to moisture from environmental conditions and remains moist not less than 85 percent of its service life.
5. UV: Ultraviolet: Substrate is exposed to ultraviolet sunlight.

## 1.4 REFERENCES

A. Air Quality Management Districts:

1. Bay Area Air Quality Management District (BAAQMD).
2. South Coast Air Quality Management District (SCAQMD).

    a. RULE 1113 7/1/2008.

B. American Concrete Institute (ACI):

1. ACI 302.1R-15, Guide to Concrete Floor and Slab Construction.

C. 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.

D. E84, Standard Test Method for Surface Burning Characteristics of Building Materials.

E. International Concrete Repair Institute (ICRI):

1. 310.2R-2013 - Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair
2. CSP - Concrete Surface Profile.

F. 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 10 / NACE 2 - Near White Metal Blast Cleaning.
5. SSPC-SP 11 - Machine Tool Cleaning to Bare Metal.
6. SSPC-SP 15 - Commercial Grade Power Tool Cleaning.
7. SSPC-PA1 - Best Practices for Paints and Coatings Application.
8. SSPC-PA2 - Measurement of Dry Coating Thickness with Magnetic Gages.
9. SSPC-PA71 - Procedure for Determining Conformance to Steel Profile/Surface Roughness/Peak Count Requirements.

G. United States Environmental Protection Agency (EPA):

1. Method 24 - Surface Coatings.

## 1.5 QUALIFICATIONS

A. 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.

B. Applicators shall have a minimum five (5) years of experience in application of similar products on similar projects.

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.

a. Include name and address of project, size, and scope of work.

C. Applicators shall possess current SSPC-QP certifications as required by the Owner and Architect.

1.6 SUBMITTALS

A. Submit all required documentation noted herein and under provisions of Section 01 33 13 - Certificates, Submittal Procedures.

B. Product Data: Manufacturer's data sheets on each paint and coating product shall 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. SDS.

C. Contractor Work Plan:

1. In general, the contractor shall supply the Owner or Architect's representative with a plan of work. The work plan shall detail but is not limited to the following items.

a. Proposed methods of containment, collection, and disposal of related debris, rinse water, or trash.
b. Proposed surface preparation standards and methods to achieve standard for each space or substrate identified on the plans, drawings, or finish schedule.
c. Proposed coating system for each space or substrate identified on the plans, drawings, or finish schedule.
d. Confirmation of compatibility for shop and field applied coatings. (where applicable).
e. Proposed methods and equipment to be used for paint application.

f. Proposed methods for maintaining proper environmental conditions during surface preparation, application, and curing cycles of the coating materials.
g. Proposed methods and job safety analysis procedures for maintaining a clean, safe and secure jobsite during work activity.
h. Proposed methods to protect coating during curing, shipping, handling, and storage.
i. Proposed methods for storing materials.
j. Proposed methods and examples of daily reports of contractor work progress.
k. Potential hazards and mitigation, work processes, scheduling conflicts or other planning items which would hinder successful and timely completion of the project.

D. Selection Samples: Submit a complete set of color chips that represent the full range of manufactures color samples available for each material.

E. Verification Samples: For each finish product specified, submit samples that represent actual product, color, and sheen.

F. Mock-Up Samples:

1. Include a mock-up if the project size or quality warrant taking such a precaution.

a. Sample of paint, finishes, and other coating materials shall be submitted on 8.5 x 11-inch sheet metal. Each sheet shall be completely coated over its entire surface with one protective coating material, type, and color.
b. Two sets of color samples to match each color selected by the Architect 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 Architect. 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.

## 1.7 QUALITY ASSURANCE

A. Quality assurance procedures and practices shall be at the discretion of the Architect 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 Architect.
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 Architect 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 Architect on their behalf at any time during the project.

B. Pre-Installation Conference:

1. The contractor, the installation sub-contractor, and the coating 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 Architect or Owner's representative any revisions or changes agreed upon, reasons thereof, and parties agreeing or disagreeing with them.

C. 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.

D. 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 work until substrate preparation and tolerances have been approved by the Owner's representative, coating system manufacturer's representative, the approved installation sub-contractor, and the contractor.

E. Inspection of Wet Film: Thickness of coatings on concrete and CMU surfaces shall be checked with a wet film thickness gage.

1. Ensure all wet film thickness requirements as specified have been met.
2. No pinholes or other irregularities will be permitted in the final coating.

F. Inspection of Dry Film: Thickness of coatings on ferrous metals shall be checked with a nondestructive, magnetic-type thickness gage.

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 Gage if a destructive tester is deemed necessary.
3. Test coating integrity of all surfaces with an approved inspection device.
4. No pinholes or other irregularities will be permitted in final coating.

G. Inspection Testing Devices: Provide following testing devices to be jointly used on this project by the contractor and Architect. 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 gage and calibration blocks for coating thickness testing.
4. Wet film thickness gage for coating thickness testing.
5. 10 times magnifier for examination.
6. Combustible gas analyzer (sniffer) for safety.

H. Documentation: Provide daily reports of all contractor activity on site to the Owner's Representative on the Friday, end of work week, for the previous week activity.

1. Document sample shall be approved by the Owner's Representative prior to reporting.
2. All documentation shall be delivered electronically to the Architect upon completion of the project.
3. Documentation shall be consistent with inspection reports utilized by NACE certified inspectors.

1.8 DELIVERY, STORAGE, AND HANDLING

A. 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.

B. 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.

C. Handling: Maintain a clean, dry storage area, to prevent contamination or damage to the coatings.

1.9 PROJECT CONDITIONS

A. 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.

B. Dehumidification and heating for coating application 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.

C. 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.

D. Substrate moisture content shall be below manufacturer's recommendation for each substrate to be coated.

E. Concrete subfloor tolerances shall be in accordance with ACI 302. Each drain in the installation area shall be working and raised or lowered to the actual finished elevation of the flooring system.

F. The minimum slab temperature shall be conditioned to 60 degrees F (16 degrees C) before commencing installation, during installation, and for at least 72 hours after installation is complete. The substrate temperature shall be at least 5 degrees F above the dew point during installation.

G. Leaks from pipes and other sources must be corrected prior to the installation of coatings.

## 1.10 SEQUENCING

A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

# PART 2 PRODUCTS

## 2.1 MANUFACTURERS

A. Manufacturer:

1. Basis of Design Product: Subject to compliance with requirements provide "Envirolastic AR425 two-component 100% solid aromatic polyurea coating as manufactured by Sherwin Williams or a comparable product by one of the following:
2. Optional Manufacturers:

   a) Stonhard.
   b) Tnemec.

B. Establish equality under Section 016000 - 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.

C. 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 Architect with the names of not less than ten successful applications of the proposed manufacturer's products that comply with these requirements.

D. Standard approved painting, coating, and lining systems are defined herein. Apply approved systems according to the finish schedule.

## 2.3 SOLID COLOR EPOXY COATING SYSTEM

A. Epoxy Coating System: Subject to compliance with requirements provide The General Polymers Epoxy Coating System with Resuprime and GP 4850 as manufactured by Sherwin-Williams consists of GP 3830 Resuprime Moisture Mitigation Primer, GP 3746 Self-Leveling Epoxy as base coat and GP4850 Polyaspartic SS or a comparable product by one of the following:

   1. Benjamin Moore & Co.
   2. ICI Paints.
   3. Kelly-Moore Paints.

4. M.A.B. Paints.
5. PPG Architectural Finishes, Inc.

B. System Physical Properties:

1. Color: Colors selected from standard colors.
2. Abrasion Resistance: 100 mgs lost.
3. ASTM D 4060, CS-17 Wheel: 1,000 cycles.
4. Flexural Strength: 10,000 psi.
5. ASTM C 580.
6. Adhesion: 300 psi.
7. ACI 503R: Concrete failure.
8. Flammability: Self-extinguishing over concrete.

9. Impact Resistance: Direct, inch.
10. MIL-D-3134J: Pound greater than 160, passes, reverse, inch pound greater than 80.
11. Resistance Elevated Temperatures MIL-D-3134J: No slip or flow at required temperature of 158 F.

## PART 3 EXECUTION

### 3.1 EXAMINATION

A. Examine all substrates and conditions, with contractor, Architect and/or Owner's 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 and masonry substrates shall be appropriately tested using current technology moisture meter equipment. Moisture levels shall comply with manufacturers' requirement.
2. Concrete, CMU Joint mortar, and all other curable materials shall have full cure properly tested for and confirmed.

B. 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.

C. 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 contractor's acceptance of substrate and conditions.

D. Identify all shop primed items and previously painted surfaces and provide preparation procedures for review and approval.

3.2 SURFACE PREPARATION:

A. 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.

   a. Remove primers and prime substrate with specified primers or others as approved by the coating system manufacturer.

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.

   a. Dehumidification must be utilized in the event that atmospheric conditions cannot be maintained.

4. Adhere to manufacturer's recoat time surface preparation requirements.

   a. 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. Install coating systems to only properly prepared surfaces.

B. 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.
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.

C. Concrete Surface Preparation:

1. Walls and Ceilings, Floors, Secondary Containment, Poured Concrete, Precast

Concrete, Tilt-Up, Cast-In-Place.

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. Grind 90-degree corners to a minimum 1/8-inch chamfered edge.
5. Cove all inside corners to a minimum 1/2-inch cant.
6. Final surface profile shall meet ICRI 310.2R-2013 Concrete Surface Profile (CSP) of 3 to 5.
7. Fill all bug holes, honeycombs, cracks, with surface fillers as approved by the coating manufacturer.
8. Final surfaces shall provide acceptable moisture levels and surface profile prior to application of the coating system.

D. CMU, Masonry Substrate Surface Preparation:

1. CMU - Concrete, Split Face, Scored, Smooth, High and Low 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 shall meet ICRI 310.2R-2013 Concrete Surface Profile (CSP) of 3-5.
5. Fill all bug holes, honeycombs, cracks, with surface fillers as approved by the coating manufacturer.

E. Ferrous Metal Surface Preparation:

1. Structural Steel Columns, Joists, Trusses, Beams, Piping, Fabrications.
2. Clean in accordance with SSPC-SP1, Solvent Cleaning.
3. Abrasive blast clean all surfaces per SSPC-SP 10, Near White Metal Standard, 2 mil profile.

4. Prepare welds to remove weld spatter and imperfections. Smooth transitions through mechanical preparation or smooth with S-W Steel Seam FT910.
5. Apply appropriate primer to blasted substrate 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.

## 3.3 INSTALLATION

A. 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. 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.
7. Inspection: The coated surface must be inspected and approved by the Architect or Owner's Representative.
8. Plural component spray applied equipment shall be properly inspected and in working condition prior to the application of materials.

   a. All gages, valves, pistons, and working parts shall be in proper working order.
   b. Coating materials stored in drums shall be premixed and heated prior to the application of the coating.
   c. Perform successful a ratio check of spray material prior application of coating.
   d. 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.
   e. 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 Owner's Representative for verification of cured material.

9. Stripe coats shall be applied to all welds, edges, nuts, bolts, difficult to reach areas.

   a. Stripe coats shall be applied directly to properly prepared surface prior to spray application of primers.

b. Stripe coat material shall be the same or separately approved material compatible with the material used for spray application of any given coat.

10. Spray application shall be performed when conditions, environments, and permitting allow.

    a. Use only spray equipment approved by the manufacturer for the specific coat of material.

11. Multiple coat applications shall be installed according to the manufacturers printed requirements.

    a. Coats of material shall be sufficiently dry prior to the application of a subsequent coat in a coating system.

    b. Do not allow excessive drying time to pass which will inhibit or reduce the inter-coat adhesion of the multiple coat system.
    c. If recoat requirements have been exceeded, brush blast or scarify prior coat according to the manufacturer's requirement. Provide written confirmation of repair process from manufacturer.
    d. Remove any dust or foreign contamination from previous coat prior to applying the next coat in a multi coat system.

12. 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.
13. 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.
14. 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.
15. 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.
16. 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.
17. 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 Owner's Representative.

B. Floor Surface Inspection: Prior to commencing Work, thoroughly examine all underlying and adjoining work, surfaces and conditions upon which Work is in any way dependent for perfect results. Report all conditions which affect Work. No "waiver of responsibility" for incomplete, inadequate, or defective underlying and adjoining work, surfaces and conditions will be considered, unless notice of such unsatisfactory conditions has been filed and agreed

to in writing before Work begins. Commencement of Work constitutes acceptance of surfaces. Test and report for moisture level in substrate to verify compliance with manufacturer's requirements. Do not proceed unless acceptable test results are achieved.

C. Verify that concrete floor surfaces meet the following requirements as related to moisture.

1. Perform in situ probe test as per ASTM F2170. Apply coatings only after substrates are determined to not exceed maximum allowable by coating manufacturer.
2. Perform anhydrous calcium chloride test as per ASTM F1869. Apply coatings only after substrates are determined to not exceed maximum allowable by coating manufacturer.
3. For slab on grade application with no vapor barrier, moisture vapor reservoir may be required prior to application of floor coating.

D. Cracks:

1. After preparation, evaluation of quantity and severity of cracks in concrete will determine the needed repairs.
2. For requirements pertaining to the treatment of cracks in concrete substrates, consult Manufacturer's publication, Concrete 102.

E. Control Joints:

1. For requirements pertaining to the treatment of control joints in concrete substrates, follow manufacturer's publication, Concrete 103.

F. Isolation/Expansion and Other Joints Subject to Movement

1. All expansion joints shall be honored through the flooring system. For requirements pertaining to the above, follow manufacturer's publication, Concrete 105.

G. 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 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.

H. 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.

I. 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.

J. 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.

## 3.4 QUALITY CONTROL

A. In general, the contractor will maintain appropriate and measurable quality control activities that ensure successful installation of the coating systems.

B. Measure all dry film thickness readings as defined in SSPC-PA2.

C. Apply all coatings using methods defined in SSPC-PA1.

D. Perform all stripe coating using methods defined in SSPC-PA 11.

E. Maintain and provide to Owner's Representative copies of daily records of contractor activity while performing work on the project. Daily record information shall 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 shall include evenly sequenced measurements of general weather condition, wind speed, air temperature, and relative humidity.
5. Atmospheric measurements during high performance coating application shall 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 gages.
8. Detailed record of start and finish times of activities performed on a given space.

F. Maintain accurate quality control records of applied coating systems.

1. Record accurate dry film thickness readings in accordance with SSPC-PA 2.

G. Supply daily reports on a timely basis to the supervising party.

## 3.5 PROTECTION

A. 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.

B. 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.

END OF SECTION 099665