

## DIVISION 9 – FINISHES

### SECTION 09 91 00

#### PART 1 GENERAL

##### 1.1 SUMMARY

###### A. Section Includes:

1. Base Bid - All labor, material, equipment, special tools and services required to clean and/or prepare surfaces and apply new coatings:

##### 1.2 REFERENCES

###### A. ASTM International:

1. D16 – Terminology Relating to Paint Related Coatings, Materials and Applications.
2. D3359 – Standard Test Methods for Measuring Adhesion by Tape Test.
3. D4138 – Standard Test Method for Measurement of Dry Film Thickness of Protective Coating Systems by Destructive Means.
4. D5064 – Standard Practice for Conducting a Patch Test to Assess Coating Compatibility.

###### B. The Society for Protective Coatings (SSPC):

1. SSPC-SP 1 – Solvent Cleaning.
2. SSPC-SP 6/NACE 3 – Commercial Blast Cleaning.
3. SSPC-SP 15 – Commercial Power Tool Cleaning to Bare Metal.

##### 1.3 DEFINITIONS

- ###### A. "Coating" as used herein means all paint systems materials, including primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate or finish coats.

- B. "Dry Film Thickness" as used herein means the thickness of a coat in a fully cured state measured in mils (1/1000 inch).
- C. "Holiday" as used herein means discontinuity in a protective coating that exposes unprotected surface to the environment.
- D. "Well-adhered" as used herein means materials that cannot be removed by lifting with a dull putty knife.

#### 1.4 SUBMITTALS

- A. Submit manufacturer's technical information including coating label analyses and application instructions.
- B. Submit complete line of manufacturer's color samples for each product.
- C. Letter of approval per Paragraph 1.6.A.
- D. Prior project experience per Paragraph 1.6.B.
- E. Name and resume of persons per Paragraph 1.6.C.
- F. Manufacturer's sample warranty.

#### 1.5 QUALITY ASSURANCE

- A. The contractor shall be a certified installer by the manufacturer.
- B. The contractor shall be approved by the manufacturer and shall have no less than (5) years experience in performance of similar work in size and complexity.
- C. All work under this Section shall be under the immediate control of the Contractor's superintendent(s) experienced in this type of work. The person(s) shall have supervised three prior projects of similar magnitude and type, and shall be present during all operations. This person(s) shall be approved by the Owner.
- D. Manufacturer representative, not associated with the Contractor, shall visit the project site at least three times during the work. Each visit shall include field report to document observations and direction provided while on site. The visits shall include:
  - 1. Pre-painting to review conditions, procedures, etc.
  - 2. During work to review preparation, application and finish.
  - 3. After work is complete to review all work.
- E. Regulatory Requirements:
  - 1. Comply with applicable laws, ordinances, and the Local Building Code.
- F. Mock-Up and Testing:
  - 1. Provide mockup of coating preparation and coating system for review by Owner

and Engineer. Maintain approved mock-ups during the job as reference for minimal standard of acceptance and quality of coating application.

2. Mock-up shall consist of two types:
  - a. Steel framing member
3. Mock-up shall include preparation of previously coated and uncoated surfaces.
4. Contractor shall perform tape test per ASTM D3359 on each of the mock-up locations. Repair coating system after test is performed. Test shall be performed with the system manufacturer and the Owner's representative present.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to job site in original, new and unopened packages and containers bearing manufacturer's name and label, and following information:
  1. Name or title of material.
  2. Fed. Spec. number, if applicable.
  3. Manufacturer's stock number and date of manufacture.
  4. Manufacturer's name.
  5. Contents by volume, for major pigment and vehicle constituents.
  6. Thinning instructions.
  7. Application instructions.
  8. Color name and number.
- B. Storage and Protection:
  1. Protect materials in a dry place, off ground and under cover to protect them from moisture and other damage.
  2. Do not use materials showing evidence of water or other damage.
  3. Storage and handling of materials shall conform to the requirements of the applicable safety regulatory agencies.
  4. Storage areas shall be heated or cooled as required to maintain the temperatures within the range recommended by the manufacturer.

#### 1.7 PROTECTION

- A. Place coating or solvent soaked rags, waste, or other materials which might constitute a fire hazard in metal containers and remove from premises at the close

of each day's work.

- B. Protect the work of all other trades against damage, marking or injury by suitable covering during the progress of the coating and finishing work. Repair any damage done.
- C. Protect and filter debris and chemicals from entering storm drains. Direct water runoff from all cleaning processes to the filtration system before allowing it to enter the storm drain system.
- D. During all cleaning operations, coordinate drain protection with the local municipality.
- E. Protect surrounding surfaces not intended for new paint/coating application. Do not overspray, coat, splotch, etc. surfaces not intended to be coated.

## 1.8 PROJECT CONDITIONS

- A. Environmental requirements:
  - 1. Install coating materials in strict accordance with all safety and weather conditions required by product literature or as modified by applicable rules and regulations of Local, State and Federal authorities having jurisdiction.
  - 2. Fumes and dust shall be controlled to prevent harmful or undesirable effects in surrounding areas. Do not allow fumes, dirt, dust or debris to enter building.
  - 3. When toxic or flammable solvents are used, the Contractor shall take all necessary precautions as recommended by the manufacturer. In all cases, the handling and use of toxic or flammable solvents, including adequate ventilation and personal protective equipment, shall conform to the requirements of the applicable safety regulatory agencies.
  - 4. Apply water base coatings only when temperature of surfaces to be coated and surrounding air temperatures are between 50 Deg. F. (10 Deg. C.) and 90 Deg. F. (32 Deg. C.), unless otherwise permitted by coating manufacturer's printed instructions.
  - 5. Apply solvent-thinned coatings only when temperature of surfaces to be coated and surrounding air temperatures are between 45 Deg. F. (7 Deg. C.) and 95 Deg. F. (35 Deg. C.), unless otherwise permitted by coating manufacturer's printed instructions.
  - 6. Do not apply coating in snow, rain, fog or mist; or when relative humidity exceeds 85 percent or to damp or wet surfaces unless otherwise permitted by coating manufacturer's printed instructions.
  - 7. Apply coating to surfaces that are cured and dry per manufacturer's tolerances.
- B. Access:
  - 1. Access will vary from location to location.

2. It is the Contractor's responsibility to safely access areas to be painted. The Contractor shall follow all local, state and federal laws with regard to fall protection and personnel safety. At a minimum, personnel shall be properly tied-off whenever accessing areas that will expose personnel to a fall hazard. It is solely the Contractor's responsibility to protect their workers. Neither the Owner, the Owner's representative assume liability or responsibility for providing access, means of access, nor direct or indirect consulting for the performance of the work.

## 1.9 WARRANTY

### A. Coating System Warranty:

1. The applicator shall furnish a twenty year warranty to the Owner for all types of new coating installed. New coating work shall be warranted against defects due to installation, including but not limited to debonding and peeling due to inadequate preparation.
  - a. All required testing and quality assurance operations necessary to furnish warranty are Contractor and manufacturer's responsibility.
2. The manufacturer shall furnish a twenty year warranty to the Owner for all types of new coating installed. New coating work shall be warranted against material defects, including but not limited to debonding, cohesive failure, cracking, and ultra violet exposure degradation.
  - a. All required testing and quality assurance operations necessary to furnish warranty are Contractor and manufacturer's responsibility.

## 1.10 MAINTENANCE

- A. Attic Stock – the Contractor shall provide the Owner unopened topcoat material from the same batch as the paint system specified, including:
  1. 5 gallons of each topcoat color.

## PART 2 PRODUCTS

### 2.1 PAINT SYSTEMS

#### A. Zone Painting:

1. Zinc/Epoxy/Urethane
2. Preparation:
  - a. SSPC-SP 6, Commercial sandblast to bare/gray metal.
  - b. SSPC-SP 15, at Contractor's option, at steel framing members only.
3. System:

- a. Prime Coat – Interplus 356
  - b. Top Coat – Interplus 356
4. Products:
- a. International Paint
    - 1) Interplus 356

## 2.2 ALTERNATIVE COATING MANUFACTURERS

- A. N/A

## 2.3 GENERAL REQUIREMENTS

- A. No lead-based products are permitted.
- B. Additives are prohibited, other than those specified by the coating manufacturer.
- C. Use only paints and coatings that are compatible with surfaces designated for new coating application.
- D. Use only primers and undercoats that are suitable for each surface to be covered and that are compatible with finish coating required.
- E. Notify Engineer in writing of any anticipated problems in using coating systems specified on existing substrates.
- F. Provide cleaners for removal of loose paint, dirt, and pollutants; which are compatible with all primers, intermediate coats, and finish coat. Thoroughly rinse all clean agents before applying primer or finish coats. Pre-approve cleaning agents with paint manufacturer.
- G. All products must be provided by a single manufacturer.

## 2.4 PERFORMANCE AND PROCEDURES REQUIREMENTS

- A. General Cleaning Requirements:
  - 1. All existing drains shall be clear and protected prior to beginning any work.
  - 2. All biological growth must be removed prior to coating.
  - 3. All efflorescence, laitance, and surface contaminants shall be removed prior to

application of new coating.

4. If previously coated, existing coating must be adhered to the substrate per the manufacturer's requirements. Manufacturer shall approve the surface preparation and existing conditions before the contractor applies coating to ensure the product warranty will be honored.
- B. Previously Coated Surfaces: materials and procedures are listed in order of process/application. Apply per manufacturers recommendations and the following:
1. Surface Preparation:
    - a. Zone Painting:
      - 1) SSPC-SP6 – Commercial sandblast to bare metal. Can use power tool to gray metal if desired for steel framing members (SSPC-SP15).
      - 2) All surface contaminants, including existing coating system shall be removed.
      - 3) Immediately apply new paint system prior to contaminants collecting on prepared surfaces. In the event flash rust reforms or coating system cannot be installed in same work shift, Contractor shall prepare surfaces to SP6 standards.
    2. System Application Requirements:
      - a. Color Selection – Shall match existing coating color. Contractor shall color match new paint system as follows:
        - 1) At one location per paint color required, use a mild soap solution to wash intact existing coating for at least one square foot area. Using utility knife or similar tool, score perimeter of a 3" x 3" area within cleaned coating area. Carefully remove existing paint system with scraping tool to capture/collect sample swatch to provide supplier/manufacturer for color match process.
      - b. Sheen – Match existing adjacent surfaces.
      - c. Terminations – Shall be neat, straight, taped finished edge. Taped edge shall be parallel, perpendicular to, and/or level with edges of structural members. For example, at base plate repainting locations, the tape shall be level or parallel to top of base plate. At angled sections, tape shall be perpendicular to angle of long axis. The contractor shall assume taping edges at all areas of paint applications.
      - d. Application Thickness:
        - 1) Zone Painting:
          - a) Prime Coat – 3 mils to 5 mils DFT.

- b) Top Coat – 3 mils to 5 mils DFT.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Examine surfaces intended to receive coatings and note conditions or defects that will adversely affect the execution and/or quality of the work.
- B. Starting of cleaning and coating work will be construed as applicator's acceptance of surfaces and conditions within any particular area.
- C. Notify Owner in writing of any such conditions or defects. Do not begin work until unsatisfactory conditions are corrected. Failure to notify Owner prior to beginning work constitutes acceptance by Contractor of the surfaces and conditions under which the work is to be performed, and acceptance by Contractor for the performance of the work.

### 3.2 PREPARATION

- A. Protection
  - 1. Provide adequate protection of all surrounding surfaces not intended to receive coating from damage due to preparation, cleaning or coating procedures. Repair damage at no cost to the Owner.
  - 2. Program coating so that construction dirt, dust, and debris will not fall onto wet, newly coated surfaces.
  - 3. When toxic or flammable solvents are used, the coating contractor shall take all necessary precautions as recommended by the manufacturer. In all cases, the handling and use of toxic or flammable solvents, including adequate ventilation and personal protective equipment, shall conform to the requirements of the applicable safety regulatory agencies.
  - 4. Provide the necessary protection to contain all dust, dirt, debris and coating chips within work area. Do not allow to migrate into building interior spaces or storm drain system.
  - 5. Provide "Wet Paint" signs as required to protect newly coated finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of coating operations.
- B. Surface Preparation
  - 1. Perform preparation and cleaning procedures in accordance with coating manufacturer's instructions and as herein specified, for each particular substrate condition.
  - 2. Remove all surface contamination such as chalk, loose coating, mill scale dirt,



foreign matter, rust, rust stains, mold, mildew, mortar, efflorescence, and sealers from surfaces to be coated.

3. If applicable, remove hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be finish-coated, or provide surface-applied protection prior to surface preparation and coating operations. Remove, if necessary, for complete coating of items and adjacent surfaces. Following completion of coating of each space or area, reinstall removed items.
4. Prepare hair line cracks ( $1/64$ " or less) per manufacturer's instructions. Reference the Details to repair cracks larger than  $1/64$ ".
5. Do not field coat the following work:
  - a. Sealant Joints
  - b. Prefinished and natural finished items including but not limited to prefinished equipment, acoustic materials, finished mechanical and electrical equipment such as light fixtures and grilles.
  - c. Non-ferrous metal surfaces including aluminum, stainless steel, chromium plate, copper, and tern coated stainless steel except where noted to be coated.
  - d. Operating parts and labels.

C. Material Preparation:

1. Mix and prepare coating materials in accordance with manufacturer's directions.
2. Stir materials before application to produce a mixture of uniform density, and stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using. Continuously agitate zinc-rich primers.
3. Store materials not in actual use in tightly covered containers. Maintain containers used in storage, mixing and application of coating in a clean condition, free of foreign materials and residue.

### 3.3 APPLICATION

A. General:

1. Apply coating in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.
2. Apply additional coats when undercoats, stains, or other conditions show through final coat of coating, until coating film is of uniform finish, color, and appearance. Give special attention to insure that surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to

that of flat surfaces.

3. Generally, coating surfaces behind movable equipment same as similar exposed surfaces. Coating surfaces behind permanently-fixed equipment or furniture with prime coat only before final installation of equipment.
4. Do not coat over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a durable coating film.

B. Scheduling Coating:

1. Apply first-coat material to surfaces that have been cleaned, pretreated, or otherwise prepared for coating as soon as practical after preparation and before subsequent surface deterioration. Do not allow surfaces to develop surface rust.
2. Allow sufficient time between successive coatings to permit proper drying. Do not recoat until coating has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat of coating does not cause lifting or loss of adhesion of the undercoat.
3. Minimum Coating Thickness: Apply materials at not less than manufacturer's recommended spreading rate, to establish a total dry film thickness as indicated or, if not indicated, as recommended by coating manufacturer.

C. Application:

1. Apply prime coat of materials which is required to be coated or finished, and which has not been prime coated by others.
2. Recoat primed and sealed surfaces where there is evidence of suction spots or unsealed areas in first coat, to assure a finish coat with no burn-through or other defects due to insufficient sealing.
3. Pigmented (Opaque) Finishes: Complete cover to provide an opaque, smooth surface of uniform finish, color, appearance and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness or other surface imperfections will not be acceptable.
4. Completed Work: Match approved samples for color, texture and coverage. Remove, refinish, or recoat work not in compliance with specified requirements.

### 3.4 CLEANING

- A. During progress of work, remove from site discarded coating materials, rubbish, cans, and rags at end of each work day.
- B. Upon completion of coating work, clean window glass and other coating-spattered surfaces. Remove spattered coating by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.
- C. Damages caused by Contractor shall be remediated to the Owner's satisfaction at

no additional cost.

END OF SECTION