

SECTION 09 96 50 - POWDER COATINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes but is not limited to surface preparation and application of powder coating systems on the following substrates:
 - 1. Exterior Substrates:
 - a. Bare metal
- B. Related Requirements:
 - 1. Section 05 52 13 "Pipe and Tube Railings."
 - 2. Section 09 91 20 "Painting"

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated. Include preparation requirements and application instructions.
- B. Samples for Verification: For each type of coating system and in each color and gloss of topcoat indicated.
 - 1. Submit Samples on rigid backing, 8 inches (200 mm) square.
 - 2. Step coats on Samples to show each coat required for system.
 - 3. Label each coat of each Sample.
 - 4. Label each Sample for location and application area.
- C. Product List: For each product indicated, include the following:
 - 1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.

1.4 QUALITY ASSURANCE

- A. Adhesion Testing: Test samples with primer only and with multiple coats applied, minimum once per shift.

1. Minimum adhesion as recommended by manufacturer.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).
 1. Maintain containers in clean condition, free of foreign materials and residue.
 2. Remove rags and waste from storage areas daily.

1.6 WARRANTY

- A. Provide warranty for both prime and finish coats. Warrant against evidence of deterioration. Deterioration includes, but is not limited to:
 1. Color fading more than 5 hunter units when tested according to ASTM D 2244.
 2. Chalking in excess of a No.8 rating when tested according to ASTM D4214
 3. Cracking, checking peeling or failure of primer or paint to adhere to each other or to metal or galvanized substrate.
- B. Warranty Period: 20 years

PART 2 - PRODUCTS

2.1 PRODUCTS.

- A. Fluoropolymer (Polyvinylidene Fluoride) with minimum 70% PVDF resin content for high performance exterior conditions. Resistant to moisture, weathering, ozone and UV radiation. Meets the material requirements of AAMA 2605. Formulated for use and approved by the manufacturer for use on the substrate indicated.
 1. Altofima; Kynar 500
 2. Akzo Nobel; Interpon D3000
 3. Sherwin Williams; Sher-Nar
 4. Tiger Drylac; Series 75
 5. PPG; Duranar
 6. Solvay Solexis; Hylar 5000
 7. Approved substitution
- B. Properties:
 1. Pencil Hardness, ASTM D3363: F minimum.
 2. Salt Spray Resistance, ASTM B117: 4,000 hours.
 3. Humidity Resistance, ASTM D2247: 4,000 hours.
 4. Dry Film Thickness, ASTM D1400: 0.20-.030 primer coat plus 1.5 to 2.5 top coat, 1.7 mil total, minimum thickness.
- C. Primer as recommended by top coating manufacturer as compatible with top coating and appropriate for substrate.

2.2 POWDER COATINGS, GENERAL

A. Material Compatibility:

1. Provide materials for use within each coating system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a coating system, provide products recommended in writing by manufacturers of topcoat for use in coating system and on substrate indicated.
3. Provide products of same manufacturer for each coat in a coating system.

B. Colors and Gloss: As selected by Architect from manufacturer's full range.

PART 3 - EXECUTION

3.1 COORDINATION

- A. Identify with galvanizer and powder coater items that are scheduled to receive powder coating. Review with galvanizer and powder coater the process steps required for preparation of galvanized surfaces for powder coating that are the responsibility of the galvanizer and those that are the responsibility of the powder coater.
- B. Make preparations required to apply powder coating to prepared substrate within time frame specified or as required by powder coating manufacturer. Prepare substrate again if not coated within required time frame.

3.2 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements and other conditions affecting performance of the Work.
- B. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- C. Proceed with coating application only after unsatisfactory conditions have been corrected.
 1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

3.3 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations applicable to substrates indicated.
- B. Clean substrates of substances that could impair bond of coatings, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
 1. Remove incompatible primers and reprime substrate with compatible primers.

- C. Iron phosphate wash plain steel.
- D. Dry surfaces in oven prior to powder coating.

3.4 APPLICATION

- A. Powder coating shall take place within six (6) hours of sandblasting.
- B. Apply powder primer and partially cure.
- C. Apply PVDF powder topcoat and cure entire system in accordance with manufacturer's recommendations.
- D. Apply powder coatings according to manufacturer's written instructions and recommendations.
 - 1. Use applicators and techniques suited for coating and substrate indicated.
 - 2. Coat back sides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
 - 3. Do not apply coatings over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
- E. If undercoats or other conditions show through final coat, apply additional coats until cured film has a uniform coating finish, color, and appearance.

3.5 CLEANING AND PROTECTION

- A. At completion of construction activities of other trades, touch up and restore damaged or defaced coated surfaces.
- B. Package material so as to minimize damage due to shipping and handling.
- C. Provide touch up material that matches the topcoat color of the powder.

3.6 EXTERIOR POWDER COATING SCHEDULE

- A. Non-Galvanized-Metal Substrates:
 - 1. Primer Coat: Primer as recommended by manufacturer. Apply at dry film thickness as recommended by manufacturer.
 - 2. Topcoat: PVDF. Apply at dry film thickness recommended by manufacturer.
 - 3. Coat all surfaces of object completely with powder coating specified.

END OF SECTION 09 96 50