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**SECTION 05 0513**  
**SHOP-APPLIED COATINGS FOR METAL**

Specifier Notes: This guide specification is written in Construction Specifications Institute (CSI) 3-Part Format in accordance with *The CSI Construction Specifications Practice Guide, MasterFormat, SectionFormat, and PageFormat*.

This Section must be carefully reviewed and edited by the Architect to meet the requirements of the Project and local building code. Coordinate this Section with Conditions of the Contract, Division 01, other specification sections, and the Drawings. Delete all Specifier Notes after editing this Section.

Section numbers and titles are based on *CSI MasterFormat 2018 Edition*.

**GENERAL**

**1.1 SUMMARY**

**A. Section Includes:**

1. Shop-applied [PVDF] [FEVE] finishes for aluminum [architectural metalwork] [roof panels] [wall panels] [doors] [frames] [entrances] [storefronts] [windows] [curtain walls] [translucent panel systems] [louvers] [skylights] [sun screens] [and] [\_\_\_\_\_].

**B. Related Sections:**

1. Division 01: Administrative, procedural, and temporary work requirements.
2. Section [05 5000- Metal Fabrications] [05 7000 - Decorative Metal] [05 5800 - Formed Metal Fabrications] [\_\_\_\_ - \_\_\_\_\_]: Architectural metalwork to receive shop-applied finishes.
3. Section [05 5100 - Metal Stairs] [05 5200 - Metal Railings] [\_\_\_\_ - \_\_\_\_\_]: Metal railings to receive shop-applied finishes.
4. Section [07 4113 - Metal Roof Panels] [07 4213 - Metal Wall Panels] [\_\_\_\_ - \_\_\_\_\_]: Metal [roof] [wall] panels to receive shop-applied finishes.
5. Section [07 6100 - Sheet Metal Roofing] [\_\_\_\_ - \_\_\_\_\_]: Metal roofing to receive shop-applied finishes.
6. Section [07 6200 - Sheet Metal Flashing and Trim] [\_\_\_\_ - \_\_\_\_\_]: Metal flashings and trim to receive shop-applied finishes.

7. Section [07 6300 - Sheet Metal Roofing Specialties] [\_\_\_\_ - \_\_\_\_]: Metal roof specialties to receive shop-applied finishes.
8. Section [07 6400 - Sheet Metal Wall Cladding] [\_\_\_\_ - \_\_\_\_]: Metal wall cladding to receive shop-applied finishes.
9. Section [08 1113 - Hollow Metal Doors and Frames] [\_\_\_\_ - \_\_\_\_]: Steel doors and frames to receive shop-applied finishes.
10. Section [08 1116 - Aluminum Doors and Frames] [\_\_\_\_ - \_\_\_\_]: Aluminum doors and frames to receive shop-applied finishes.
11. Section [08 3213 - Sliding Aluminum-Framed Glass Doors] [\_\_\_\_ - \_\_\_\_]: Aluminum sliding doors to receive shop-applied finishes.
12. Section [08 4113 - Aluminum-Framed Entrances and Storefronts] [\_\_\_\_ - \_\_\_\_]: Aluminum-framed entrances and storefronts to receive shop-applied finishes.
13. Section [08 4200 - Entrances] [\_\_\_\_ - \_\_\_\_]: Metal entrances to receive shop-applied finishes.
14. Section [08 4413 - Glazed Aluminum Curtain Walls] [\_\_\_\_ - \_\_\_\_]: Aluminum curtain wall to receive shop-applied finishes.
15. Section [08 4433 - Sloped Glazing Assemblies] [\_\_\_\_ - \_\_\_\_]: Metal sloped glazing assemblies to receive shop-applied finishes.
16. Section [08 4500 - Translucent Wall and Roof Assemblies] [\_\_\_\_ - \_\_\_\_]: Metal wall and roof assemblies to receive shop-applied finishes.
17. Section [08 6200 - Unit Skylights] [08 6300 - Metal-Framed Skylights] [\_\_\_\_ - \_\_\_\_]: Aluminum skylight assemblies to receive shop-applied finishes.
18. Section [08 5113 - Aluminum Windows] [\_\_\_\_ - \_\_\_\_]: Aluminum windows to receive shop-applied finishes.
19. Section [08 9100 - Louvers] [\_\_\_\_ - \_\_\_\_]: Aluminum louvers to receive shop-applied finishes.
20. Section [10 7113.43 - Fixed Sun Screens] [\_\_\_\_ - \_\_\_\_]: Aluminum sun screens to receive shop-applied finishes.

## 1.2 REFERENCES

- A. American Architectural Manufacturers Association (AAMA):
  1. 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Architectural Extrusions and Panels.
  2. 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Architectural Extrusions and Panels.
- B. ASTM International (ASTM) [www.astm.org](http://www.astm.org):
  1. D1730 - Standard Practices for Preparation of Aluminum and Aluminum-Alloy Surfaces for Painting.
  2. D2244 - Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates.
  3. D4214 - Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films.

## 1.3 SUBMITTALS

- A. Submittals for Review:
  1. Product Data: Manufacturer's descriptive data and test results for specified finishes.
  2. Samples: [2 x 3-1/2] [\_\_\_\_ x \_\_\_\_] inch coating samples [showing available colors] [in specified color] on aluminum backing.
- B. Quality Control Submittals:
  1. Compliance: Manufacturer will comply with referenced AAMA standards.
- C. Closeout Submittals:
  1. Maintenance Data: Provide information regarding touch-up, cleaning, and maintenance of finishes.

## 1.4 QUALITY ASSURANCE

- A. Applicator Qualifications: Must have a minimum of twenty years' experience in PVDF extrusion coating shop applied finishes.
- B. Verify accuracy of components, quantities, and sizes prior to application of finishes.
- C. Applicator - PVDF-Based Finishes:
  - 1. Utilize zirconium-based five-stage pretreatment system applied in accordance with AAMA and ASTM standards.
  - 2. Possess in-house blending capabilities, allowing for only specific amount of paint needed for each project.
  - 3. Utilize documented quality control protocol in accordance with AAMA test procedures.
    - a. Color uniformity: 8.1.1.
    - b. Performance: 8.1.2.
    - c. Dry film hardness: 8.3.
    - d. Dry adhesion: 8.4.1.1.
    - e. Wet adhesion: 8.4.1.2.
    - f. Boiling water adhesion: 8.4.1.3.
    - g. Direct impact: 8.5.
    - h. Muriatic acid resistance 8.7.1.
    - i. Mortar resistance: 8.7.2.
    - j. Online Quality Assurance Inspection:
      - 1) Proper paint coverage: 5.0.
      - 2) Visual/appearance: 5.2.
      - 3) Dry-film thickness: 5.3.
      - 4) Color 2ÅE per ASTM D2244, Section 3.

## 1.5 DELIVERY, STORAGE AND HANDLING

- A. Apply manufacturer's standard protective coverings to finished surfaces.
- B. Deliver, store, and handle finished components in manner to prevent damage to finishes.
- C. Furnish touch-up paint upon request.

## 1.6 WARRANTIES

- A. Furnish manufacturer's [5] [10] [20] year warranty providing coverage that coatings:
  - 1. Will not chip, crack or peel (lose adhesion) but this does not include minute fracturing which may occur in proper fabrication of building parts.
  - 2. Will not chalk in excess of ASTM D4214 Number 8 rating, determined by procedure outlines in ASTM D4214.
  - 3. Will not change color more than five Delta-E Hunter units (square root of the sum of square Delta L, Delta a, and Delta b) as determined by ASTM D2244, Method 6.3. Fading or color changes may not be uniform if surfaces are not equally exposed to sun and elements. Mica and metallic coatings are exempt due to inability to accurately measure color; mica and metallic flakes reflect and scatter light in random patterns.
- B. Furnish applicator's [5] [10] [20] year warranty providing coverage against failure of PVDF-based coating over improper pretreatment where coating was not applied in accordance with ASTM D1730, Type B, Method 5 or ASTM B449, Section 5.
- C. Furnish applicator's [5] [10] year warranty providing coverage that coatings:
  - 1. Will resist cracking, crazing, flaking, and blistering if forming and welding are completed prior to finishing; post-forming or welding voids warranty.
  - 2. Will not chalk in excess of ASTM D4214 Number 8 rating, determined by procedure outlined in ASTM D-4214.
  - 3. Will not change color more than five Delta-E Hunter units (square root of the sum of square Delta L, Delta a, and Delta b) as determined by ASTM D2244, Method 6.3. Fading or color changes may not be uniform if surfaces are not equally exposed to sun and elements.

## **PART 2 PRODUCTS**

### **2.1 APPLICATORS**

- A. Acceptable Applicator: Finishing Dynamics [www.finishingdynamics.com](http://www.finishingdynamics.com)
- B. Substitutions: [Under provisions of Division 01.] [Not permitted.]

### **2.2 SHOP-APPLIED FINISHES**

- A. PVDF-Based Coating: AAMA 2605, fluoropolymer finish containing minimum 70 percent PVDF resins, [two] [three] [four] coat system, [custom] [ ] color [to be selected from manufacturer's full color range]. (such as Fluropon, Fluropon Classic, Fluropon Classic II, Fluropon Premier, Fluropon Kameleon, Fluropon Effects Nova)
- B. PVDF- AAMA 2604 fluoropolymer finish containing minimum 60 percent PVDF resins, [such as Acroflur, Acrodize, Acrodize hardcoat].
- C. FEVE selected finishes

## **PART 3 EXECUTION**

### **3.1 ADJUSTING**

- A. Touch up minor scratches and abrasions in finishes in accordance with finish manufacturer's instructions; replace components having damage that cannot be successfully touched up.

### **3.2 CLEANING**

- A. Clean finished surfaces after installation in accordance with finish manufacturer's instructions.

### **3.3 SCHEDULE**

- A. Schedule to be determined at time of Purchase order