

SECTION 09 96 59
HIGH BUILD GLAZED COATINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Preparation of substrates, and application of epoxy and urethane coatings at metal stairs, railings, AESS and other locations indicated on Drawings.

1.2 REFERENCES

- A. American Society for Testing and Materials:
 - 1. ASTM D 16 - Standard Terminology Relating to Paint, Varnish, and Related Products.
 - 2. ASTM D 523 - Test Method for Specular Gloss.
- B. Steel Structures Paint Council:
 - 1. SSPC-SP2 - Hand Tool Cleaning.
 - 2. SSPC-SP3 - Power Tool Cleaning.
 - 3. SSPC-SP6 - Commercial Blast Cleaning.
 - 4. SSPC-SP7 – Brush-Off Blast Cleaning

1.3 DEFINITIONS

- A. Comply with ASTM D 16 for interpretation of forms used in this Section.
- B. Gloss Factors: Values of various degrees of luster when tested in accordance with ASTM D 523 shall comply with following:
 - 1. Eggshell: 5 to 20 units at 60 degree test angle.
 - 2. Satin: 15 to 35 units at 60 degree test angle.
 - 3. Semi-Gloss: 30 to 65 units at 60 degree test angle.
 - 4. Gloss: Over 65 units at 60 degree test angle.

1.4 SUBMITTALS

- A. Product Data: Furnish manufacturer's technical information, including label analysis, instruction for handling, storage, surface preparation procedures and application recommendation for each paint system including primers and sealers
- B. Shop Drawings: Submit painting schedule including manufacturer's product name, color, and substrate proposed for painting and method of application.

- C. Samples: Provide stepped samples defining each separate coat, including fillers and primers of each color, texture and material to be applied on the following substrates:
 - 1. Ferrous Metal: Provide two 4" square samples of flat metal and two 8" long samples of solid metal for each color and finish.
 - 2. Galvanized Steel: Provide two 4" square samples of flat galvanized metal and two 8" long samples of solid metal for each color and finish.
- D. Quality Control Submittals:
 - 1. Certificates: Furnish by the manufacturer that all products supplied comply with local regulations controlling use of volatile organic compound (VOC's).

1.5 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Manufacturer's Qualifications: Minimum of five years documented experience in manufacturing specified epoxy coatings.
 - 2. Applicator Qualifications: Minimum five years documented experience applying epoxy coatings on commercial projects with minimum on five completed projects of similar scope and complexity; approved and trained by coating manufacturer.
 - 3. Single Source Responsibility: Provide primers and undercoat paint produced by the same manufacturer's as the finish coat.
- B. Regulatory Requirements: Comply with applicable codes, regulations ordinances and laws regarding use and application of coating systems containing volatile organic compounds.
- C. Pre-Installation Conference: Prior to making field samples and placing order for materials, Architect, Contractor, installer and manufacturer's representative shall meet and agree on methods and schedule for application.
- D. Mock-Up:
 - 1. Apply each coating on minimum 10 square feet of area for each type of coating material and substrate.
 - 2. Mock-up will be used to judge quality and finish of completed work.
 - 3. Simulate finished lighting conditions for review of in-place work.
 - 4. Mock-up may be left in place as part of completed work.
 - 5. Final acceptance of colors will be from job applied samples.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in factory sealed containers with manufacturer's labels intact and legible.

- B. Container label to include manufacturer's name, type of paint, brand name, lot number and date of manufacturer, brand code, coverage rate, surface preparation instructions for mixing and reducing drying time, cleanup requirements, color designation, and application instructions.
- C. Store materials in protected area at temperature recommended by manufacturer.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Project Conditions:
 - 1. Apply coating materials only when air and surface temperatures do not exceed minimum or maximum requirements for product to be applied; relative humidity is not above 85 percent and surface temperature is at least 5 degrees F above dew point; and wind velocity is below 20 mph.
 - 2. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulations of dust, fumes, vapors, or gases.
- B. Existing Conditions: Provide lighting levels of 80 ft. candles measured mid-height at substrate surface.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturers:
 - 1. AkzoNobel (AN).
 - 2. Comex Group (CG)
 - 3. PPG Industries, Inc. (PPG).
 - 4. Precision Coatings (PC).
 - 5. Sherwin Williams Co. (SW).
 - 6. Tnemec Company, Inc. (Tnemec).

2.2 MIXING

- A. Mix and thin materials in strict accordance with manufacturer's instructions.
- B. Do not use material beyond manufacturer's recommended pot life.

2.3 FINISH

- A. Colors: Match Architect's sample.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify surfaces to be coated are dry, clean and ready to accept base coat in accordance with manufacturer's recommendations.

3.2 PREPARATION

- A. Prepare surfaces in accordance with manufacturer's recommendations. Protect surrounding and adjacent surfaces in manner recommended by coating manufacturer.
- B. Scrape or grind protrusions flush with surface.
- C. Dislodge dirt, mortar spatter and other dry materials by scraping or brushing. Remove dust and loose material by brushing, sweeping, vacuuming and blowing with high pressure air.
- D. Remove oil, wax and grease by scraping off heavy deposits and cleaning with mineral spirits or hot trisodium phosphate solution followed by water rinse.
- E. Ferrous Metal:
 - 1. Remove loose rust, mill scale and other foreign matter by hand or power tool cleaning complying with SSPC-SP6 and coating manufacturers instructions.
 - 2. Clean structural steel beams and metal deck which cannot be reached by commercial blast cleaning in accordance with SSPC-SP2 and manufacturers instructions.
 - 3. Clean surface profile to minimum anchor pattern of 1.5 to 2.0 mils.
 - 4. Remove any visible rust that forms on blast cleaned surface prior to coating application by reblasting in compliance with SSPC-SP6.
- F. Galvanized Metal: Remove contaminants and protective mill coating by blast cleaning in compliance with SSPC-SP7 or acid etching with a solution of phosphoric acid and detergents specifically formulated to remove grease and oil residue, and provide a lightly etched substrate surface.

3.3 APPLICATION

- A. Apply materials at minimum specified film thickness by method recommended by manufacturer.
- B. Apply first coatings within four hours maximum of commercial blasting of steel or hand tool cleaning of tops of beams.
- C. Allow each coat to dry thoroughly before recoating.

- D. Apply each coat pinhole free.
- E. Work material into surface voids and hairline cracks. Cut in edges clean and sharp where work joins other materials or colors.
- F. Make finish coats smooth, uniform in texture and color, and free of brush marks, laps, runs, dry spray, overspray and skipped or missed areas.
- G. Do not apply coating to any moving part of operating units, mechanical and electrical parts, laboratory labels, or equipment identification plates.

3.4 FIELD QUALITY CONTROL

- A. Request acceptance of each coat before applying succeeding coats.
- B. Check each coat for pinholes with Holiday Pinhole Wet Sponge Detector.
- C. Manufacturer's representative shall visit site at beginning and during coating process to offer assistance on proper application procedures and verify that materials are applied in accordance with specification requirements.

3.5 ADJUSTING

- A. Touch up and repair damaged or otherwise unacceptable work.

3.6 CLEANING

- A. Remove coating spatters from glass and adjoining surfaces.

3.7 INTERIOR COATINGS SCHEDULE

- A. Metal - Ferrous: Metal Fabrications, Handrails, Guardrails, and Stairs
1. Finish: Two coats low semigloss polyurethane over epoxy primer.
 2. Cleaning: SSPC-SP2, hand tool for shop primed steel; SSPC-SP6 commercial blast clean for field cleaned steel.
 3. First Coat: Epoxy-polyamide coating, semi-gloss; 4 to 6 dry film thickness (175 sq.ft./gal).
 - a. Devoe Coatings, Devran 203 Waterborne Epoxy Primer.
 - b. Moore: Corotech Epoxy Mastic, V160.
 - c. PPG: Amerlock 2/400 Epoxy Coating.
 - d. S-W: Recoatable Epoxy Primer B67R5.
 - e. Tnemec: Series 66 Hi-Build Epoxoline.
 4. Second Coat: High-solids, high-build acrylic polyurethane enamel, low semi-gloss; 4.0 mil dry film thickness.
 - a. Devoe Coatings, Devthane 378H Aliphatic Urethane Semi-Gloss enamel.
 - b. Moore: Corotech Aliphatic Acrylic Urethane, Semi Gloss, V510.
 - c. PPG: Pitthane Acrylic-Aliphatic Urethane Enamel Semi-Gloss 95-8800.
 - d. S-W: Acrolon 218 HS Acrylic Polyurethane Semi-gloss, B65-650.
 - e. Tnemec: Series 73, Endura-Shield II.
- B. Metal - Galvanized: Metal Fabrications, Handrails, Guardrails, and Stairs
1. Finish: One coat low semigloss polyurethane over urethane primer.
 2. First Coat/Primer: Zinc-rich urethane primer, semi-gloss; 3.0 mil dry film thickness.
 - a. Devoe Coatings, Devran 203 Waterborne Epoxy Primer.
 - b. Moore: Corotech Epoxy Mastic, V160.
 - c. PPG: Aquapon WB Water Base Epoxy Primer 98-46.
 - d. S-W: Corothane I Galvapak 2K Zinc Primer, B65G10.
 - e. Tnemec: Series 90-97 Tneme-Zinc.
 3. Second Coat: High-solids, high-build acrylic polyurethane enamel, low semi-gloss; 4.0 mil dry film thickness each coat.
 - a. Devoe Coatings, Devthane 378H Aliphatic Urethane Semi-Gloss enamel.
 - b. Moore: Corotech Aliphatic Acrylic Urethane, Semi Gloss, V510.
 - c. PPG: Pitthane Acrylic-Aliphatic Urethane Enamel 95-8800.
 - d. S-W: Acrolon 218 HS Acrylic Polyurethane Semi-Gloss, B65-600.
 - e. Tnemec: Series 73, Endura-Shield II.

3.8 EXTERIOR COATING SCHEDULE

- A. Metal - Ferrous: (Higher grade anti-corrosive coating to be used on ungalvanized metals)
1. Finish: Semigloss polyurethane over high-build epoxy and zinc-rich epoxy primer.
 2. Cleaning: SSPC-SP6, commercial blast.

3. Primer: Epoxy-polyamide, anti-corrosive coating, semi-gloss.
 - a. Devoe Coatings, Catha-Coat 313 Organic Zinc-Rich Epoxy Primer.
 - b. Moore: Corotech Epoxy Mastic, V160.
 - c. PPG: PMC Amercoat Zinc Rich Epoxy Primer 68HS.
 - d. S-W: Zinc Clad III HS, B69A100.
 - e. Tnemec: Series L-69 Polyamide Epoxy.
 4. First Coat: Epoxy, high-build, low gloss.
 - a. Devoe Coatings, Bar-Rust 231 Multi-Purpose Epoxy Mastic.
 - b. Moore: Corotech Epoxy Mastic, V160.
 - c. PPG: Amerlock 2/400 Epoxy Coating.
 - d. S-W: Industrial & Marine Macropoxy 646 Fast Cure Epoxy, B58-600 Series.
 - e. Tnemec: Series 280 Polyamine Epoxy.
 5. Second Coat: High-solids, two-component, pigmented polyurethane, semi-gloss.
 - a. Devoe Coatings, Devthane 378 Aliphatic Urethane Semi-Gloss Enamel.
 - b. Moore: Corotech Aliphatic Acrylic Urethane, Semi Gloss, V510.
 - c. PPG: Pitthane, Ultra Semi-Gloss Urethane Enamel 95-8800.
 - d. S-W: Industrial and Marine, Hi-Solids Polyurethane Semi-Gloss, B65-350 Series.
 - e. Tnemec: Series 73 Aliphatic Acrylic Polyurethane Semi-Gloss.
 - f.
- B. Metal - Galvanized: (Typically used on Handrails)
1. Finish: Semigloss polyurethane over epoxy and vinyl wash primer.
 2. Cleaning: SSPC-SP7, brush-off blast, or acid etching
 3. Primer: Vinyl wash.
 - a. Devoe Coatings Vinyl Wash Primer.
 - b. Moore: Corotech Epoxy Mastic, V160.
 - c. PPG: Polyclutch Vinyl Wash Primer.
 - d. S-W: Industrial & Marine Industrial DTM Wash Primer, B71Y1.
 - e. Tnemec: Series L-69 Polyamide Epoxy.
 4. First Coat: Epoxy, high-build, low gloss.
 - a. Devoe Coatings, Bar-Rust 231 Multi-Purpose Epoxy Mastic.
 - b. Moore: Corotech Epoxy Mastic, V160.
 - c. PPG: Amerlock 2/400 Epoxy Coating.
 - d. S-W: Industrial & Marine Macropoxy 646 Fast Cure Epoxy, B58-600 Series.
 - e. Tnemec: Series 280 Polyamine Epoxy.
 5. Second Coat: High-solids, two-component, pigmented polyurethane, semi-gloss.
 - a. Devoe Coatings, Devthane 378 Aliphatic Urethane Semi-Gloss Enamel.
 - b. Moore: Corotech Aliphatic Acrylic Urethane, Semi- Gloss, V510.
 - c. PPG: Pitthane, Ultra Semi-Gloss Urethane Enamel 95-8800.
 - d. S-W: Industrial and Marine, Hi-Solids Polyurethane Semi-Gloss, B65-350 Series.
 - e. Tnemec: Series 73 Aliphatic Acrylic Polyurethane Semi-Gloss.

END OF SECTION