

GRAFFITI-RESISTANT COATINGS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Section Includes: Graffiti-resistant coatings on exterior precast concrete panels up to a height of approximately 10'-0" above grade for Parking Structure and to 4<sup>th</sup> Floor Cornice at the Hall of Justice.
- B. Related Sections:
  - 1. Precast architectural concrete is specified in Section 03 45 00.
  - 2. Water repellents are specified in Section 07 19 00.

1.02 SUBMITTALS

- A. Product Data: Manufacturer's product literature for each coating system.
- B. Certification: Duplicate copies of manufacturer's affidavit with each shipment of materials delivered to the Project site certifying that materials furnished comply with specified requirements.
- C. Sample Panel: Apply specified graffiti-resistant coatings on approximately 10-square feet of wall area where directed by the County's Representative. Obtain County's Representative's approval before proceeding with coating application. Approved sample shall be used as a standard for the Project.
- D. Maintenance Materials and Instructions:
  - 1. Furnish one identified unopened 5-gallon container of each coating used, and one 5-gallon container of cleaning agent to be used for graffiti removal.
  - 2. Coating and cleaning agent shall not be used for re-coating or touching-up damaged surfaces before final acceptance of the work.
  - 3. Furnish County with manufacturer's instructions for graffiti removal and maintenance.
- E. Warranty.

1.03 QUALITY ASSURANCE

- A. Applicator shall be certified by the coating manufacturer for application of graffiti-resistant coatings of the type required for this Project, with a record of successful in-service performance.
- B. Source Limitations: Obtain base coatings, top coatings and removal agent from the same manufacturer.

1.04 PERFORMANCE REQUIREMENTS

- A. Provide graffiti-resistant coating system complying with the following:
  - 1. Permanent coating system. Coating shall not require re-application regardless of number of graffiti taggings during the life of the 10-year performance warranty period.
  - 2. Show no signs of deterioration or change of appearance after graffiti removal during the warranty period. No ghosting, staining or shadowing.

3. Capability of removing 100-percent of all types of paint and graffiti materials from treated surfaces without damaging the coating or the substrate.
4. Upon graffiti removal, no evidence of graffiti shall remain.
5. Capable of withstanding a minimum of 120 cleaning cycles over the same area without measurable coating deterioration.
6. Shall not increase dirt pick-up of substrate.
7. Meet the following test results for the following chemicals:
  - a. MEK No effect after 5-days.
  - b. Carboxylic Acid No effect after 5-days.
  - c. 75% Phosphoric Acid No effect after 5-days.
  - d. 37% HCL 3 hours blister.
  - e. 50% Sulfuric Acid No effect after 5-days.
  - f. 20% NIT 68 hours blister.

#### 1.05 JOB CONDITIONS

- A. Environmental Requirements: Comply with coating manufacturer's recommendations for environmental conditions regarding coating application. Do not apply coating in areas where dust is being generated.
- B. Allow wet surfaces to dry thoroughly and attain temperature and conditions specified before proceeding with or continuing coating application.
- C. Provide drop cloths, shields, barricades and other protection necessary to safeguard adjacent surfaces not to be painted. Post signs immediately after coating application.
- D. Provide and maintain protection as required to protect finished work from damage until final acceptance.

#### 1.06 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to Project site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label with the following information:
  1. Name or title of material.
  2. Product description (generic classification or binder type).
  3. Manufacturer's stock number and date of manufacture.
  4. Contents by volume, for pigment and vehicle constituents.
  5. Thinning instructions.
  6. Application instructions.
  7. Handling instructions and precautions.

- B. Store materials in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45-deg. F. Maintain containers used in storage in a clean condition, free of foreign materials and residue.
- 1. Keep storage area neat and orderly. Remove oily rags and waste daily. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and applying coatings.

#### 1.07 WARRANTY

- A. Warrant graffiti-resistant coatings to be free from defects in materials and workmanship for a period of 10-years from date of Substantial Completion. Graffiti-resistant coatings shall continue to repel graffiti after repeated cleaning during the 10-year warranty period. This warranty shall be in addition to and not a limitation of other rights the County may have against the Developer Design/Builder under the Contract Documents.

#### 1.08 EXTRA MATERIALS

- A. Furnish extra graffiti removal materials in quantity equal to twelve 16-ounce bottles. Package materials in unopened, factory-sealed containers for storage and identify with labels describing contents.
- B. Deliver materials and an inventory list just prior to Substantial Completion and store where directed by the County's Representative.

### PART 2 - PRODUCTS

#### 2.01 APPROVED MANUFACTURERS

- A. American Polymer Corporation "Graffiti Solution System" (GSS), Prosoco, Inc. "Defacer Eraser Sacrificial Coating SC-1" or approved equal.

#### 2.02 GRAFFITI-RESISTANT COATINGS

- A. Provide materials that comply with local Air Quality Management District's VOC classification.
- B. Coatings shall meet the following requirements:
  - 1. ASTM B117 and ASTM D714 (salt spray minimum acceptable of 8000 hours).
  - 2. ASTM D530 (hardness).
  - 3. ASTM D412 (tensile strength and elongation).
  - 4. ASTM D522 (pass 3/8 inch mandrel).
  - 5. ASTM D968 (abrasion test).
  - 6. ASTM E96 (vapor transmission).
  - 7. Water clear, non-yellowing, free of waxes and urethanes.
  - 8. Non-toxic, non-flammable, biodegradable, with a PH 7 to 8.5.
  - 9. Shall allow moisture vapor transmission.
- C. Siloxane Penetrating Water Sealer: American Polymer Aqua-lock WB Water Repellent, compatible with graffiti solution system. Provide over concrete, masonry units, brick tile and block surfaces prior to application of undercoating.

- D. Undercoating: GSS-10 Undercoating, Clear VU High Solids Base Coating (AP307); a water-based high-performance under coating used as a sealer. For metal, marble, slate and tile surfaces use Sure Bond (AP308).
- E. Topcoating: GSS-10; permanent anti-graffiti top coating.
  - 1. Clear Finish: AP100 Clear Matte or AP101 Clear Semi-Gloss or AP102 Clear Gloss as selected by the County's Representative.
- F. Graffiti Remover: GSS Erasol; non-flammable, biodegradable, with a pH 7-8.5 and recyclable, allowing graffiti removal without the use of blasting equipment, hot water, or high-pressure wash equipment.

## PART 3 - EXECUTION

### 3.01 EXAMINATION

- A. Examine substrates and conditions under which graffiti-resistant coatings will be applied.
  - 1. Apply coatings only after unsatisfactory conditions have been corrected and surfaces to receive coatings are thoroughly dry.
  - 2. Start of application is construed as applicator's acceptance of surfaces within that particular area.
- B. Review other Sections where primers or coatings are provided to ensure compatibility of total systems for various substrates.
  - 1. If potential incompatibility of primers applied by others exists, obtain the following from the primer applicator before proceeding:
    - a. Confirmation of primer's suitability for expected service conditions.
    - b. Confirmation of primer's ability to be top coated with specified materials.
  - 2. Notify the County's Representative of anticipated problems before proceeding with application.

### 3.02 PREPARATION

- A. Remove plates, machined surfaces, and similar items in place that are not to be coated. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before coating.
  - 1. After completing coating operations, reinstall items that were removed; use workers skilled in the work involved.
- B. Cleaning: Before applying coatings, clean substrates of substances that could impair bond of coatings. Remove oil and grease before cleaning. Schedule cleaning and coating application so dust and other contaminants from cleaning process will not fall on wet newly coated surfaces.
- C. Surface Preparation: Clean and prepare surfaces to be coating according to manufacturer's written instructions for each substrate condition.
  - 1. Provide barrier coats over incompatible primers or remove primers and re-prime substrate.
  - 2. Cementitious Substrates: Prepare concrete masonry, cement plaster and concrete surfaces. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen as required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods to prepare surfaces. Do not coat surfaces if moisture content exceeds manufacturer's maximum.

3. Metal Substrates: Clean ferrous metal surfaces that have been shop coated. Remove oil, grease, dirt, and other foreign substances.
- D. Material Preparation: Mix and prepare coating materials in accordance with manufacturer's instructions.
1. Maintain containers used in mixing and applying coatings in a clean condition, free of foreign materials and residue.
  2. Stir materials before applying to produce a mixture of uniform density. Stir as required during application.

### 3.03 APPLICATION

- A. Apply coatings according to manufacturer's written instructions.
1. Use applicators and techniques best suited for the material being applied.
    - a. Do not apply coatings over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to forming a durable coating film.
    - b. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until coating has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat does not cause under-coat to lift or lose adhesion.
  2. Apply to a height of approximately 8-feet above grade. Final height shall be approved by the County's Representative.
- B. Application over Cementitious Surfaces:
1. All natural surfaces including concrete, masonry units, brick tile and block shall be treated with a siloxane penetrating water sealer compatible with the graffiti solution system.
  2. Base: Minimum of 2 coats or as required to achieve a pinhole free surface, of specified barrier coating, 3- to 4-mils minimum dry film thickness.
  3. Finish: Minimum 2 coats of top coating, 3- to 4-mils minimum dry film thickness or as required to comply with specified warranty requirements.
- C. Application of Primed Metal Surfaces:
1. Finish: 2 coats of top coating, 3- to 4-mils minimum dry film thickness.
- D. Completed Work: Match approved samples and mock-up for color, texture and coverage. Remove, refinish, or recoat work that does not comply with specified requirements.

### 3.04 FIELD QUALITY CONTROL

- A. The County reserves the right to invoke the following procedure at any time and as often as County deems necessary during the period when coatings are being applied:
1. County will engage the services of a qualified testing agency to sample coating material being used. Samples of material delivered to Project site will be taken, identified, sealed, and certified in presence of the Developer Design/Builder.

2. Testing agency will perform appropriate tests for the following characteristics as requested by the County:
  - a. Quantitative materials analysis.
  - b. Absorption.
  - c. Accelerated weathering.
  - d. Accelerated yellowness.
  - e. Alkali and mildew resistance.
  - f. Abrasion resistance.
  - g. Washability.
3. County may direct Developer Design/Builder to stop applying coatings if test results show materials being used do not comply with specified requirements. Remove non-complying coating materials from the Project site, pay for testing, and recoat surfaces coated with rejected materials. If necessary, remove rejected materials from previously coated surfaces if, on recoating with specified materials, the two coatings are not compatible.

- B. Demonstration: Apply alkyd-based graffiti to a 2-foot square treated area selected by the County's Representative. Allow graffiti to remain on surface for a minimum of 5-days and demonstrate complete removal in the presence of the County's Representative.

### 3.05 CLEANING

- A. Cleanup: At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from the Project site.
- B. After completing coating application, clean spattered surfaces. Remove spattered coatings by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

### 3.06 PROTECTION

- A. Protect adjacent work against damage from coating operation. Correct damage by cleaning, repairing, replacing and recoating as approved by the County's Representative, and leave in an undamaged condition.
- B. Provide "wet paint" signs to protect newly coated finishes. After completing coating operations, remove temporary protective wrappings.
- C. Touch-up and restore damaged or defaced coated surfaces in accordance with manufacturer's instructions.

END OF SECTION