



SECTION 09000

FINISHES AND COATINGS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Anti-graffiti coating for metal and flat hard surfaces.

1.2 RELATED SECTIONS

- A. Section 05 5000 - Metal Fabrications
- B. Section 09 7700 - Special Wall Surfaces
- C. Section 09 9460 - Metallics, Patinas and Chrome Finishes
- D. Section 09 9620 - Graffiti-Resistant Coatings
- E. Section 09 9700 - Special Coatings

1.3 REFERENCES

- A. American National Standards Institute (ANSI):
 - 1. ANSI Z26.1 - Safety Glazing Materials
- B. American Society for Testing and Materials (ASTM):
 - 1. ASTM D 882 - Tensile Properties of Thin Plastic Sheeting.
 - 2. ASTM D 3330 - Peel-Adhesion at 180 Degree Angle.
 - 3. ASTM E 84-16 - Surface Burning Characteristics of Building Materials.
 - 4. ASTM E 162-16 – Flame Spread
 - 5. ASTM E 662-17 – Smoke Generation
 - 6. ASTM D 532-14 – Standard Test Method For Specular Gloss

C. Consumer Product Safety Commission

- 1. CPSC 16 CFR 1201

1.4 PERFORMANCE REQUIREMENTS

- A. Fire Performance: Surface burning characteristics when tested in accordance ASTM E 84-16:
 - 1. Flame Spread: 25, maximum.
 - 2. Smoke Developed: 450, maximum.
 - 3. Must meet Class A Interior Wall and Ceiling Finish
- B. Abrasion Resistance: Film must have a surface coating that is resistant to abrasion such that, a gloss factor less than 5% at 20 degrees, 60 degrees, and 85 degrees per ANSI Z26.1 Test 17 and ASTM D 523.



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1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Selection Samples: For each film specified, submit film samples representing manufacturer's film type for the project.
- D. Verification Samples: For each film specified, two samples representing film color and pattern.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: All primary products specified in this section will be supplied by a single manufacturer with a minimum of ten years' industry experience.
- B. Installer Qualifications: All products listed in this section are to be installed by a single installer with a minimum of five years demonstrated experience in installing products of the same type and scope as specified.
 - 1. Provide documentation that the installer is authorized by the Manufacturer to perform Work specified in this section.
 - 2. Provide proof of ability to purchase material through authorized distributor or manufacture.
 - 3. Material is to be precut and made to fit panel with no more than 1/8" tolerance and have .2 radius corners to alleviate peeling at corners.
 - 4. Precutting must be done via CNC or similar device to ensure clean cutting is done.
 - 5. Part number and cataloging is done and stored in a database by area, property, or location to allow easy reordering of panels. Engraved in predetermined corner on surface of film with minimum ½ font for viewing and cataloging.
- C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish areas designated by Architect.
 - 2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
 - 3. Refinish mock-up area as required to produce acceptable work.
- D. Material attributes.
 - 1. Materials must be manufactured of extruded PET and/or Polyurethane.
 - 2. Material must have a deposition of mixed metals to match Stainless Steel 304 or Brushed Aluminum with #4-line grain finish.
 - 3. Adhesive must be a removable system to allow adhesive to bond to material upon removal.
 - 4. Material thickness minimum of .006 in (6-Mil)
 - 5. Acrylic based hard for scratch resistance and acid attack resistance.
 - 6. Adhesive protective release liner minimum thickness of .003 in (3-Mil)

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of hazardous materials, and materials contaminated by hazardous materials, in accordance with requirements of local authorities having jurisdiction.
- C. Please recycle materials to reduce carbon footprint.



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- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.9 WARRANTY

- A. Anti-graffiti films are warranted for a period of 12 months when installed outdoors and installed indoors. Installation must be done to manufacturer's guidelines. Warranty is for material failure, not against vandalism.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer:
Graffiti Shield, Inc.
2940 E. La Palma Ave Suite D
Anaheim, CA 92806
(714) 575-1100
sales@graffiti-shield.com
www.graffiti-shield.com
- B. Acceptable Distributor/Installer:
- C. Requests for substitutions will be considered in accordance with provisions of Section 1.6.

2.2 ANTI-GRAFFITI SURFACE FILM

- A. Anti-Graffiti Surface Film: Metal Shield Stainless Steel 6 Mil Anti-Graffiti Film. Stainless Steel polyester film with a durable acrylic abrasion resistant coating over one surface and a pressure sensitive adhesive over the other.
 - 1. Physical / Mechanical Performance Properties:
 - a. Film Color: Opaque and mimic Stainless Steel.
 - b. Thickness: Nominal 6 mils (.006 in).
 - c. Tensile Strength (ASTM D 882): 28,000-30,000 lbs./psi.
 - d. Break Strength (ASTM D 882) (Per Inch Width): 190 lbs.
 - e. Elongation at Break (ASTM D 882): >100 percent.
 - f. Peel Strength: 1,000 g/inch. (ASTM D 3330)
 - g. Abrasion Resistance (ASTM D 523): ANSI Z26.1 Test 17 with a gloss factor less than 5% at 20 degrees, 60 degrees, and 85 degrees
 - h. Chemical Resistance (ASTM D 523): ANSI Z26.1 Test 19-Pass
 - i. Radiant panel index of 0 (zero)
 - j. Surface Burn Building Materials (ASTM E 84-16)
 - 1. Flame spread index = 15
 - 2. Smoke develop index = 110
 - k. Optical Density of Smoke (ASTM E 662-17)
 - 1. Ds = 0 @ 1.5 min
 - 2. Ds = >1.0 @ 4 min
 - 3. Ds Max < 63 Radiant Source
 - 4. Ds Max < 64 Pilot Flame
 - 2. Uniformity: No noticeable pin holes, streaks, thin spots, scratches, banding or other optical defects.
 - 3. Variation in Total Transmission across the Width: Less than 2 percent over the average at any portion along the length.
 - 4. Identification: Labeled as to Manufacturer as listed in this Section.
 - 5. Acid Resistant Top Coat. Must have an acid resistant top coat that does not mar during a vandal attack when acid etching agents are used. Acid agent must wipe off clean and leave no residue in top coat.



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- B. Anti-Graffiti Surface Film: Metal Shield Brushed Aluminum 6.5-Mil Anti-Graffiti Film. Brushed Aluminum polyester film with a durable acrylic abrasion resistant coating over one surface and a pressure sensitive adhesive over the other.

1. Physical / Mechanical Performance Properties:
 - a. Film Color: Opaque and mimic Brushed Aluminum.
 - b. Thickness: Nominal 6 mils (.006 in).
 - c. Tensile Strength (ASTM D 882): 28,000-30,000 lbs./psi.
 - d. Break Strength (ASTM D 882) (Per Inch Width): 190 lbs.
 - e. Elongation at Break (ASTM D 882): >100 percent.
 - f. Peel Strength: 1,000 g/inch. (ASTM D 3330)
 - g. Abrasion Resistance (ASTM D 523): ANSI Z26.1 Test 17 with a gloss factor less than 5% at 20 degrees, 60 degrees, and 85 degrees
 - h. Chemical Resistance (ASTM D 523): ANSI Z26.1 Test 19-Pass
 - i. Radiant panel index of 0 (zero)
 - j. Surface Burn Building Materials (ASTM E 84-16)
 1. Flame spread index = 15
 2. Smoke develop index = 110
 - k. Optical Density of Smoke (ASTM E 662-17)
 1. Ds = 0 @ 1.5 min
 2. Ds = >1.0 @ 4 min
 3. Ds Max < 63 Radiant Source
 4. Ds Max < 64 Pilot Flame
2. Uniformity: No noticeable pin holes, streaks, thin spots, scratches, banding or other optical defects.
3. Variation in Total Transmission across the Width: Less than 2 percent over the average at any portion along the length.
4. Identification: Labeled as to Manufacturer as listed in this Section.
5. Acid Resistant Top Coat. Must have an acid resistant top coat that does not mar during a vandal attack when acid etching agents are used. Acid agent must wipe off clean and leave no residue in top coat.

- C. Anti-Graffiti Surface Film: Metal Shield Gold Brushed 6.5-Mil Anti-Graffiti Film. Gold Brushed polyester film with a durable acrylic abrasion resistant coating over one surface and a pressure sensitive adhesive over the other.

1. Physical / Mechanical Performance Properties:
 - a. Film Color: Opaque and mimic Brushed Gold.
 - b. Thickness: Nominal 6 mils (.006 in).
 - c. Tensile Strength (ASTM D 882): 28,000-30,000 lbs./psi.
 - d. Break Strength (ASTM D 882) (Per Inch Width): 190 lbs.
 - e. Elongation at Break (ASTM D 882): >100 percent.
 - f. Peel Strength: 1,000 g/inch. (ASTM D 3330)
 - g. Abrasion Resistance (ASTM D 523): ANSI Z26.1 Test 17 with a gloss factor less than 5% at 20 degrees, 60 degrees, and 85 degrees
 - h. Chemical Resistance (ASTM D 523): ANSI Z26.1 Test 19-Pass
 - i. Radiant panel index of 0 (zero)
 - j. Surface Burn Building Materials (ASTM E 84-16)
 1. Flame spread index = 15
 2. Smoke develop index = 110
 - k. Optical Density of Smoke (ASTM E 662-17)
 1. Ds = 0 @ 1.5 min
 2. Ds = >1.0 @ 4 min
 3. Ds Max < 63 Radiant Source
 4. Ds Max < 64 Pilot Flame
2. Uniformity: No noticeable pin holes, streaks, thin spots, scratches, banding or other optical defects.
3. Variation in Total Transmission across the Width: Less than 2 percent over the average at any portion along the length.
4. Identification: Labeled as to Manufacturer as listed in this Section.



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5. Acid Resistant Top Coat. Must have an acid resistant top coat that does not mar during a vandal attack when acid etching agents are used. Acid agent must wipe off clean and leave no residue in top coat.

PART 3 EXECUTION

3.1 EXAMINATION

- A. If preparation of surfaces is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.
 1. Surfaces receiving new film should first be examined to verify that they are free from defects and imperfections, which will affect the final appearance:
- B. Do not proceed with installation until surfaces have been properly prepared and deviations from manufacturer's recommended tolerances are corrected. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result under the project conditions.
- C. Commencement of installation constitutes acceptance of conditions.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Tools needed: Spray bottle/tank, slip solution, squeegee/s, snap off blade knife, plastic hard card, lint free towels, nonabrasive scrub pad or 220 grit sand paper.
- C. Film should be cut by CNC or similar device to have no more than 1/8" tolerance on all edges.
- D. Remove film and clean surface with slip solution (slip solution is composed of ¾ oz. (4 pumps) of slip solution per quart of filtered water) and nonabrasive scrub pad or 220 grit sandpaper to remove all debris or deep tags from surface. Clean all edges of the surface to clear them of any additional debris.
- E. Remove release liner and spray slip solution on adhesive thoroughly and mist the surface to facilitate proper positioning of film.
- D. Apply film to surface and position correctly, then lightly spray film with slip solution.
- E. Squeegee the top section from middle to the left, then to the right. Next squeegee down center from top to bottom. Then from center to the left with overlapping passes towards the bottom, then from the center to the right with overlapping passes towards the bottom. Spray slip solution to film and repeat squeegee pattern a second time.
- G. Wrap lint free towel around plastic hard card and press any additional water out around all edges. Once done, inspect entire surface for any left over water and remove.
- H. Upon completion of film application, allow 30 days for moisture from film installation to dry thoroughly, and to allow film to dry flat with no moisture dimples when viewed under normal viewing conditions.

3.4 CLEANING AND PROTECTION

- A. Remove left over material and debris from Work area. Use necessary means to protect film before, during, and after installation.
- B. Touch-up, repair or replace damaged products before Substantial Completion.
- C. After application of film, wash film using common window cleaning solutions, including ammonia solutions, 30 days after application. Do not use abrasive type cleaning agents and bristle brushes to avoid scratching film. Use synthetic sponges or soft cloths.