FLORIDA DEPARTMENT OF TRANSPORTATION
State Materials Office
5007 NE 39th Avenue
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Florida Method of Test for the Effectiveness of Anti-Graffiti Coating Materials

Designation: FM 5-580

1. SCOPE

This method covers the outdoor exposure testing of sacrificial and non-sacrificial water cleanable anti-graffiti coating materials. Outdoor environmental exposure is achieved through the procedures described in ***ASTM G7***.

The performance of the anti-graffiti coating material is tested and reported for two different exposure conditions. When the coating material is:

a) Exposed to the environment prior to the application of the graffiti
b) Exposed to the environment following the application of the graffiti

Non-sacrificial materials are tested a second time if they pass the first cleaning test.

2. REFERENCE DOCUMENTS

ASTM G7 – Standard Practice for Atmospheric Environmental Exposure Testing of Nonmetallic Materials

3. APPARATUS

3.1. Three commonly available types of aerosol spray paint cans. Each spray can shall be one of red, blue, and black colors to account for material performance with different colors and different paint types. Other easily distinguishable colors can be used if procurement is difficult.

3.2. Pressure washer delivering water at the pressure, angle, and flow rate specified below.

3.3. Manufacturer's specific graffiti removal equipment and supplies (for sacrificial systems only).

4. PROCEDURE

Perform the test procedure as outlined in this section (see ***Figure** 2*).

4.1. Seven, 4-inch by 8-inch fiber cement test panels will arrive at the testing laboratory. These panels shall be coated with the anti-graffiti coating material by the manufacturer prior to their shipment.

4.2. Spray paint three of the seven panels with three different types of paint as shown in ***Figure** 1*. Lines shall be approximately one inch wide and approximately one inch apart. Mark the back of the panels using indelible marker with all product identification information. Photograph all seven panels. Record the date of spray painting.

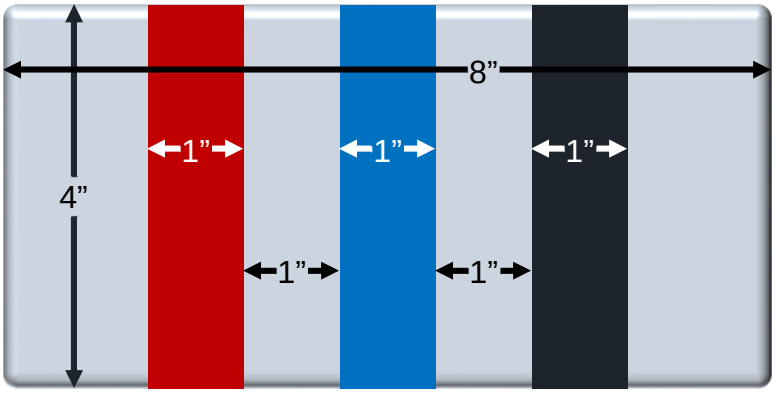

Figure 1: Layout of spray paint strips over the anti-graffiti test panel.

4.3. Place six of the panels (3 painted and 3 unpainted) on the outside racks for a 6-month exposure period (±2 weeks). Record the start date of the exposure period. Keep one of the panels indoors for control. When the exposure period is over, record the end date.

4.4. At the end of the exposure period, move the panels indoors and photograph all seven panels prior to pressure washing. Compare the six exposed panels to the control panel and note the date of the pressure washing.

4.5. Spray paint the exposed unpainted panels and photograph them.

4.6. Allow the newly coated panels to cure for 7 days. Then, pressure wash the six spray painted panels within 14 days of the end of the exposure period.

4.7. After the pressure washing, photograph the panels and compare them to the control panel. Note the date of the pressure washing.

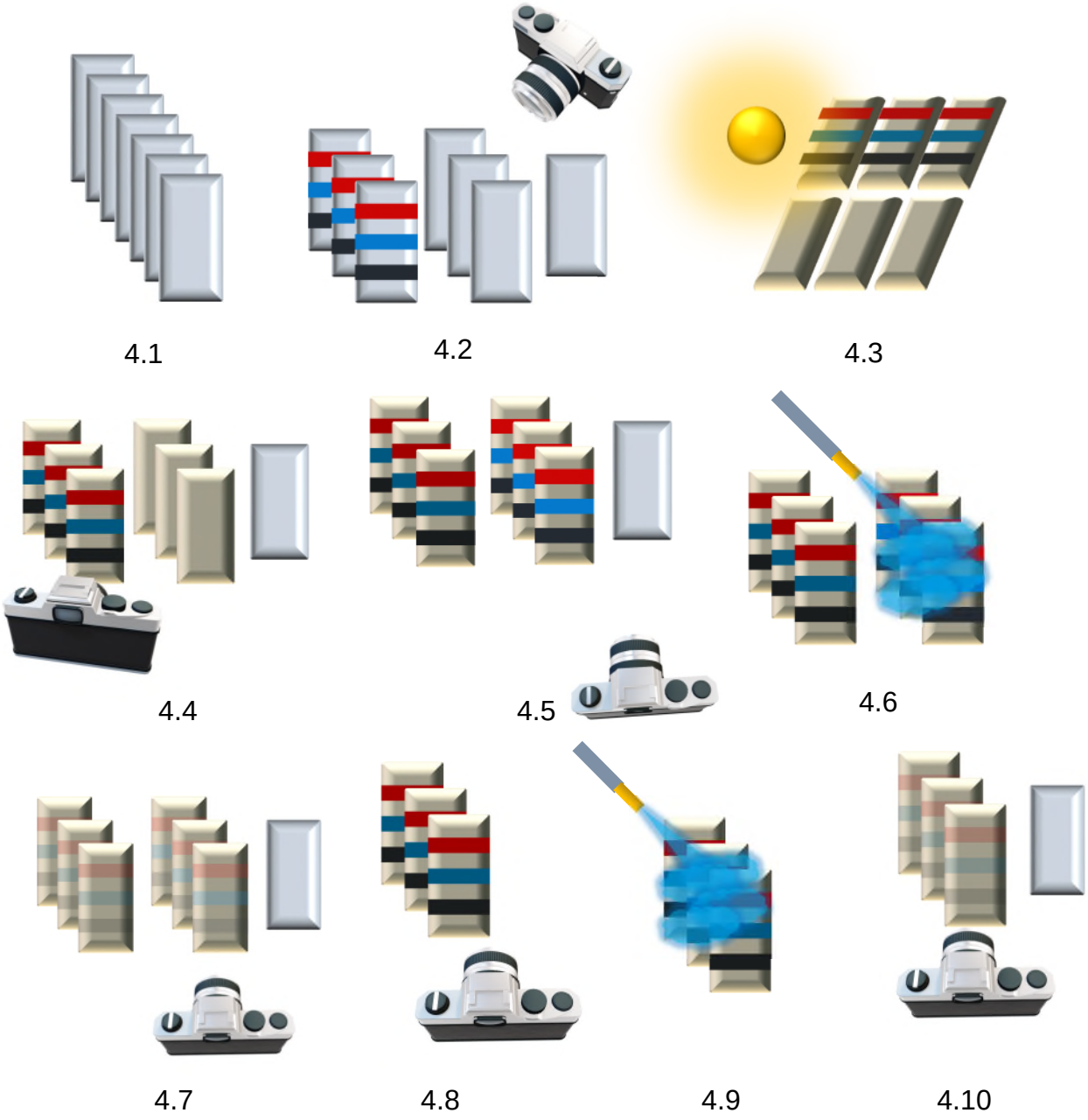

Figure 2: Anti-Graffiti coating material test procedure outline.

4.8. If the coating material is non-sacrificial, spray paint three of the panels one more time and photograph them.

4.9. Allow the newly coated panels to cure for 7 days. Then, pressure wash the three spray painted panels.

4.10. After pressure washing compare the panels to the control panel and photograph. Record the date of pressure washing.

5. PRESSURE WASHING PROCEDURE

5.1. Removal process shall be based on the sacrificial nature of the anti-graffiti coating material.

5.1.1. **SACRIFICIAL:** Clean the panels per the manufacturer's instructions.

5.1.2. **NON-SACRIFICIAL:** Clean the panels with pressurized water. The water shall not be heated prior to filling the reservoir. The temperature of the water should not exceed 50°C.

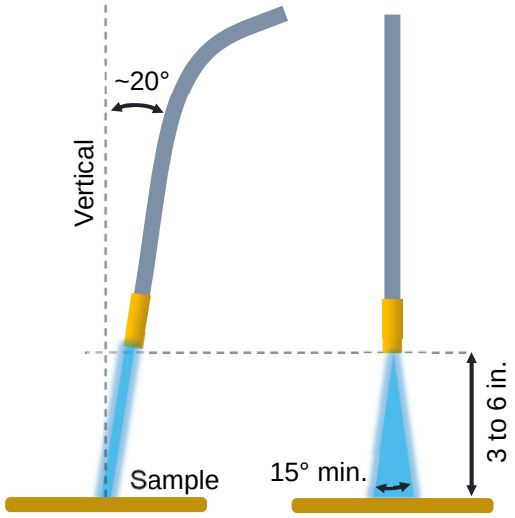

Figure 3: The fan angle, the application distance, the application angle of the pressure washer.

5.2. Water pressure shall be between 800 psi and 1,500 psi. The flow rate shall be between 4 gal/min to 6 gal/min. The nozzle shall have a fan type spray that disperses water with an at least 15° angle. The spray gun should be held at an angle approximately 20° from vertical. Position the nozzle 3 to 6 inches from the face of the panel and direct the flow as shown in ***Figure 3***.

5.3. Wash each panel for 1 minute ±5 seconds making 70 to 80 passes over the panel.

5.4. Evaluate each panel for cleanliness. Document whether the graffiti is removed, partially removed or still intact.

6. REPORT

6.1. Record observations regarding graffiti removal, including information identifying which paint types and colors were not completely removed, if any. For non-sacrificial coatings, note any delamination or visual defects.

6.2. Report the following information with reference to exposures conducted according to this practice:

6.2.1. Exposure start date

6.2.2. Exposure end date

6.2.3. Spray painting date

6.2.4. Pressure washing date

6.2.5. Observations after the pressure washing

6.2.6. Test site

6.2.7. Testing technician

6.2.8. Photographs (initial, post-exposure, post-cleaning, and secondary test photographs if applicable)

6.3. Report any deviations from this method.