Florida Test Method  
for  
Green-Colored Pavement Markings Materials  
Designation: FM 5-622  

Part A – Laboratory Evaluation  

1. SCOPE  

This method covers the laboratory testing procedures for evaluating the friction resistance and color properties of green-colored pavement marking material (GCPMM) panels in a laboratory environment for acceptance on the Innovative Product List (IPL) for use on asphalt and concrete surfaces in Florida.  

2. APPARATUS  

2.1 Three Wheel Polishing Device (TWPD)  
2.2 Dynamic Friction Tester (DFT) - This apparatus is standardized in accordance with ASTM E1911, “Standard Test Method for Measuring Paved Surface Frictional Properties Using the Dynamic Friction Tester”.  
2.3 Colorimeter- This apparatus is standardized in accordance with ASTM E1347, “Standard Test Method for Color and Color-Difference Measurement by Tristimulus Colorimetry”.  
2.4 GCPMM Panel – This apparatus shall have dimensions of 19 ¾” x 15 ¾”, be affixed to a steel plate at least 1/16” thick and once constructed the GCPMM panel must be uniform and level. To ensure a proper fit on the testing jig it is very important that the GCPMM panel is the correct size.  

3. TEST PROCEDURE  

This procedure applies to the tests being performed on the entire GCPMM system, which includes the binder and the aggregate. Polishing procedures should be performed in a laboratory environment using a Three Wheel Polishing Device (TWPD) as shown in Figure 1. Inspect the panel thoroughly before testing. Look for any hairline cracks that might open during polishing and any large voids. After each polishing cycle, once the sample is dry, friction testing using a DFT and color testing using a colorimeter shall be performed. If there are any signs of tracking on the panel from the polish wheels, it should be noted on the test report.
3.1 Polishing Procedure

The TWPD should rotate in the counterclockwise direction, polishing the sample at a fixed rate of 60 rpm. The load applied is 100 lbs., with pressure of pneumatic tires maintained at 50 psi, and continuous water wetting on the GCPMM panels during testing. The stiffness of the tires measured using a durometer should have a shore hardness of 65 ±5. The friction and color testing will be performed on the GCPMM panels at intervals of 0, 50,000, 100,000 and 150,000 cycles on the TWPD.

3.2 Friction Test

The friction test shall be conducted on the GCPMM panels provided from the manufacturer in accordance with ASTM E1911. The friction testing should be performed along the same circular path as that of polishing test. Three friction tests will be conducted at each polishing interval.

3.3 Color Property Test

The daytime chromaticity coordinates (x, y) and daytime luminance factor (Y) should be collected at any three (3) random locations on the circular path traversed by the TWPD at each polishing interval in accordance with ASTM E1347.

Note 1: If friction or color testing does not provide acceptable results at any polishing interval, testing will be halted.
4. REPORT

4.1 Friction numbers and color properties for the GCPMM panels at each interval shall be averaged and reported using FDOT's Materials Form FM 5-622 Part A (Figure 2).

Figure 2. FDOT’s Materials Form FM 5-622 Part A.
Part B – In-Service Evaluation

1. SCOPE

   This method covers the testing procedures for in-service evaluation of friction resistance, wear, and pavement distresses of Green-Colored Pavement Markings Materials (GCPMM) over asphalt and concrete surfaces used in Florida.

2. APPARATUS

   2.1 Dynamic Friction Tester (DFT) - This apparatus is standardized in accordance with ASTM E1911, “Standard Test Method for Measuring Paved Surface Frictional Properties Using the Dynamic Friction Tester”.

3. TEST PROCEDURE

   All testing should be performed with a DFT on the 2'-4' dotted line portion of the GCPMM located within the keyhole lane areas of the green-colored bike lane sections as shown in Figure 3. In the absence of a keyhole lane, the tests can be performed as per the guidance provided in Figure 3.

   3.1 Friction Test

   Friction tests shall be conducted at one location, three (3) discrete 2'-4' dotted lines in keyhole lane (only one test at each location) per project as shown in Figure 3.

   3.2 Wear Evaluation

   The wear rate of the GCPMM is computed using the affected area divided by the total area, expressed as a percentage.

   3.3 Pavement Distress

   Pavement distress of the GCPMM shall be documented with visual estimation of affected area and dominant distress types.
Figure 3. Testing Protocol on Green-Colored Pavement Marking Sections.
4. REPORT

4.1 Friction numbers, wear, and pavement distress properties for the GCPMM shall be averaged and reported using FDOT’s Materials Form FM 5-622 Part B (Figure 4).

![Form for FM5-622 Part B](image)

**Figure 4. FDOT’s Materials Form FM 5-622 Part B**