

TRAFFIC MARKING MATERIALS – THERMOPLASTIC MATERIAL – HOT SPRAY.

(REV 5-9-22) (FY 2023-24)

SUBARTICLE 971-1.4 is deleted and the following substituted:

971-1.4 Approved Product List (APL): All pavement marking materials shall be one of the products listed on the Department’s Approved Product List (APL). Manufacturers seeking evaluation of their product shall submit an application in accordance with Section 6 and the infrared identification curve (2.5 to 15 μm) for the vehicle component. The Department will test hot spray thermoplastic, hot-applied standard thermoplastic, and profiled thermoplastic pavement marking materials in accordance with FM 5-541, Part B. The Department will test preformed thermoplastic and hot-applied high friction thermoplastic pavement marking materials in accordance with FM 5-622, Part A. For standard paint, durable paint, two reactive component material, and permanent tape, manufacturers shall provide National Transportation Product Evaluation Program (NTPEP) field test data meeting FDOT Specification requirements. A notation of the number of coats and the thickness of each coat at which the product passes testing may be placed on the APL. When listed, this will be the minimum criteria for application of the pavement marking material.

SECTION 971 is expanded by the following new Article:

971-11 Thermoplastic Material-Hot Spray.

971-11.1 General: The manufacturer shall utilize alkyd-based materials only and shall have the option of formulating the material according to his own specifications. However, the requirements delineated in this Specification and Section 711 shall apply regardless of the type of formulation used. The pigment, glass spheres, and filler shall be well dispersed in the resin. The material shall be free from all skins, dirt, and foreign objects.

971-11.2 Composition:

Component	White	Yellow
Binder	25.0% minimum	25.0% minimum
TiO ₂ (ASTM D-476 Type II Rutile)	10.0% minimum	-
Glass Spheres	Report Value	Report Value
Yellow Pigment	-	% minimum per manufacturer
Calcium Carbonate and Inert Filler (No. 200 sieve)	30.0% maximum	40.0% maximum

Percentages are by Weight

971-11.3 Retroreflective Elements: The glass spheres in the intermix shall be determined by the manufacturer and identified on the APL.

971-11.4 Physical Requirements: Sample specimens shall be prepared in accordance with ASTM D-4960 and shall meet the following criteria:

Property	Test Method	Minimum	Maximum
Water Absorption	ASTM D-570	-	0.5%
Softening Point	ASTM D-36	190°F	-
Low Temperature Stress Resistance	AASHTO T-250	Pass	-
Specific Gravity	Water displacement	1.87	2.3
Indentation Resistance	ASTM D7735* Type A Durometer	5	30
Impact Resistance	ASTM D-256, Method A	1.0 N·m	-
Flash Point	ASTM D-92	475°F	-

* The durometer and panel shall be at 115°F, with a 1,000 g load applied. Instrument measurement shall be taken after 15 seconds.

971-11.4.1 Set to Bear Traffic Time: When applied at the temperatures and thicknesses specified by Section 711, the material shall set to bear traffic in not more than two minutes.

971-11.4.2 Retroreflectivity: The white and yellow pavement markings shall attain an initial retroreflectance of not less than 300 mcd/lx·m² and not less than 250 mcd/lx·m², respectively. The retroreflectance of the white and yellow pavement markings at the end of the one-year service life shall not be less than 150 mcd/lx·m².

971-11.4.3 Durability: Durability is the measured percent of thermoplastic material completely removed from the pavement. The thermoplastic material line loss must not exceed 5.0% at the end of the one year service life.

971-11.5 Glass Spheres: Drop-on glass spheres shall be Type 1 or as identified by the manufacturer and meet the requirements of 971-2. Glass spheres and application rates are identified on the APL.

971-11.6 Color: Color shall meet the requirements of 971-1.6.

971-11.7 Application Properties: The thermoplastic material shall readily apply and adhere to the existing traffic stripe at temperatures as recommended by the manufacturer from equipment approved by the Engineer to produce a line which shall be continuous and uniform in shape having clear and sharp dimensions at a minimum thickness as identified in the plans.

The material, when formed into traffic stripes, must be readily renewable by placing an overlay of new material directly over an old line of the same material. Such new material shall bond itself to the old line in a manner such that no splitting or separation occurs.

Overlay stripe thicknesses shall be measured as specified in Section 711 for hot spray thermoplastic pavement markings.

971-11.8 Packing and Marking: The thermoplastic material shall be packed in suitable biodegradable or thermo-degradable containers which will not adhere to the product during shipment and storage. The container of thermoplastic material shall weigh approximately 50 lb. The label shall warn the user that the material shall be heated in the range as recommended by the manufacturer.