



Designation: D 713 – 90 (Reapproved 1998)

## Standard Practice for Conducting Road Service Tests on Fluid Traffic Marking Materials<sup>1</sup>

This standard is issued under the fixed designation D 713; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

### 1. Scope

1.1 This practice covers the determination of the relative service life of fluid traffic marking materials such as paint, thermoplastic, epoxy, and polyester products under actual road conditions using transverse test lines. Materials under test are applied under prescribed conditions and periodic observations are made using prescribed performance criteria.

1.2 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

### 2. Referenced Documents

2.1 *ASTM Standards:*

D 711 Test Method for No-Pick-Up Time of Traffic Paint<sup>2</sup>

D 913 Test Method for Evaluating Degree of Resistance to Wear of Traffic Paint<sup>2</sup>

### 3. Significance and Use

3.1 This practice is an accelerated evaluation of bead retention and wear characteristics of fluid traffic marking materials. It is used to determine the useful life of such markings in the field. The same procedures are applicable to evaluating longitudinal lines to determine service life.

### 4. Type and Location of Pavement for Tests

4.1 Select sections where traffic is moderate and free-rolling with no grades, curves, intersections, or access points near enough to cause excessive braking or turning movements, where wear is uniform with full exposure to the sun throughout daylight hours, and there is good drainage. Select surfaces that are representative of the pavements upon which the fluid traffic

marking material will be used in practice. Such surfaces include portland cement concrete, sheet asphalt, bituminous concrete, rock asphalt, and bituminous surface treatment.

### 5. Conditions at Time of Application

5.1 Clean the test area thoroughly of all foreign material. Do not apply traffic paint when the pavement surface is damp or wet nor when the pavement temperature is below 50°F (10°C). Application between 10 a.m. and 3 p.m. is recommended. During application record air and pavement temperature hourly.

### 6. Measurement of Wet Film Thickness

6.1 To aid in obtaining the correct film thickness, a length of roofing paper placed by the side of the road can be used. Place a rigid metal test panel on the roofing paper and in the path of the test line. A 12 by 12-in. (300 by 300-mm) metal panel 1/16 in. (1.5 mm) in thickness is satisfactory. Immediately after the test line is applied by the motorized striper, read the wet film thickness. If the wet film thickness is not satisfactory, adjust the spray pressure and repeat until the target wet film thickness is attained. It is important that no glass beads or other interfering materials be present that would give a false wet film reading. When the wet film thickness is correct, apply a test line across a tared metal panel and weigh immediately. A balance must be immediately available and be thoroughly shielded from wind as well as be of 1500-g capacity with 0.1 g or better sensitivity. As a basis for determination of glass bead application (7.1) the weight of a paint line 4 by 12 in. (100 by 300 mm) (without consideration for solvent loss) can be calculated as follows:

$$W = 0.0943 \times t \times g \quad (1)$$

where:

$W$  = weight of paint line, g,

$t$  = mil thickness, and

$g$  = weight per gallon, lb.

### 7. Measurement of Glass Beads

7.1 After the completion of 6.1, apply another test line to a tared panel with the motorized striper, this time also adding the glass beads, and weigh immediately. The weight difference between this measurement and that in 6.1 gives the amount of

<sup>1</sup> This practice is under the jurisdiction of ASTM Committee D-1 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D01.44 on Traffic Coatings.

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<sup>2</sup> *Annual Book of ASTM Standards*, Vol 06.02.