



Designation: D713 – 23

Standard Practice for Conducting Road Service Tests on Fluid Traffic Marking Materials¹

This standard is issued under the fixed designation D713; 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 SI 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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

D913 Practice for Evaluating Degree of Pavement Marking Line Wear

D6628 Specification for Color of Pavement Marking Materials

E1710 Test Method for Measurement of Retroreflective Pavement Marking Materials with CEN-Prescribed Geometry Using a Portable Retroreflectometer

E2367 Test Method for Measurement of Nighttime Chroma-

ticity of Pavement Marking Materials Using a Portable Retroreflection Colorimeter

3. Significance and Use

3.1 This practice is an accelerated evaluation of bead retention, retroreflectivity, daytime color, night time color, 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. Follow the pavement marking manufacturer's recommendation for the application of the pavement marking to be tested. This should include the recommendations for air and pavement temperature, material temperature, relative humidity, wind chill, and wind speed. Application between 10 a.m. and 3 p.m. is recommended. During application record air and pavement temperature, wind speed, and relative humidity hourly.

6. Measurement of Wet Film Thickness

6.1 The wet film thickness should preliminarily be measured by the applicator using a comb gauge or other suitable mechanical instrument prior to performing weighted measurements. A length of roofing paper placed by the side of the road can be used and should be as level as possible to maintain a consistent speed of the motorized striper. Place a rigid metal test panel on the roofing paper and in the path of the test line. A 300 mm by 300 mm (12 in. by 12 in.) metal panel 1.5 mm ($\frac{1}{16}$ in.) in thickness is satisfactory. To determine the wet mils

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

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.