Designation: D7538 – 09 (Reapproved 2023)

Standard Practice for Evaluating the Water Wash-Off Resistance of Traffic Paints Using an Atomizing Spray Device[1]

This standard is issued under the fixed designation D7538; 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 A newly applied traffic paint film may be exposed to rain of varying intensities shortly after application. Practice D7377 describes a practice for evaluating the water wash-off resistance of traffic paints to a hard rain using a steady stream of water from a faucet at a rate of approximately 5.7 L per min. Practice D7538 is a similar practice that describes the use of an adjustable nozzle atomizing spray device to deliver a spray of water that simulates rain rates from approximately 0.05 L to 0.5 L per min. This test can be used to compare conventional and fast-dry traffic paints for their relative ability to withstand rain soon after application on roadway surfaces.

1.2 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

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]

D562 Test Method for Consistency of Paints Measuring Krebs Unit (KU) Viscosity Using a Stormer-Type Viscometer

D711 Test Method for No-Pick-Up Time of Pavement Markings

D823 Practices for Producing Films of Uniform Thickness of Paint, Coatings and Related Products on Test Panels

D1005 Test Method for Measurement of Dry-Film Thickness of Organic Coatings Using Micrometers

D1212 Test Methods for Measurement of Wet Film Thickness of Organic Coatings

D3924 Specification for Standard Environment for Conditioning and Testing Paint, Varnish, Lacquer, and Related Materials

D4414 Practice for Measurement of Wet Film Thickness by Notch Gages

D7377 Practice for Evaluating the Water Wash-Off Resistance of Traffic Paints using a Water Faucet

3. Terminology

3.1 *Definitions:*

3.1.1 *conventional waterborne traffic paint, n*—an aqueous traffic paint that uses a conventional-dry latex binder.

3.1.1.1 *Discussion*—Typical no-pick-up dry times, as prescribed in Test Method D711, for conventional traffic paints are 20 min to 45 min.

3.1.2 *durable fast-dry waterborne traffic paint, n*—an aqueous traffic paint that uses a third generation durable fast-dry latex binder.

3.1.2.1 *Discussion*—Air or airless spray application on roadways is typically 0.64 mm wet or about 0.39 mm dry. The range of application for durable waterborne paints is 0.56 mm to 0.89 mm wet, but sometimes the durable paints are also striped at standard line thickness.

3.1.3 *fast-dry waterborne traffic paint, n*—an aqueous traffic paint that uses a fast-dry traffic latex binder.

3.1.3.1 *Discussion*—Typical no-pick-up dry times, as prescribed in Test Method D711, for fast-dry traffic paints are <10 min.

3.1.4 *standard line fast-dry waterborne traffic paint, n*—an aqueous traffic paint that uses a first or second generation fast-dry latex binder.

3.1.4.1 *Discussion*—Air or airless spray application on roadways is typically 0.38 mm wet or about 0.23 mm dry.

[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.