



Designation: D3319 – 23

Standard Practice for the Accelerated Polishing of Aggregates Using the British Wheel¹

This standard is issued under the fixed designation D3319; 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 a laboratory procedure by which an estimate may be made of the extent to which different coarse aggregates may polish.

1.2 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard. Regarding sieves, per Specification E11: “The values stated in SI units shall be considered standard for the dimensions of the wire cloth openings and the diameter of the wires used in the wire cloth.” When sieve mesh sizes are referenced, the alternate inch-pound designations are provided for information purposes and enclosed in parentheses.

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

C778 Specification for Standard Sand

D75/D75M Practice for Sampling Aggregates

D1415 Test Method for Rubber Property—International Hardness

D3666 Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials

E11 Specification for Woven Wire Test Sieve Cloth and Test Sieves

E303 Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester

E501 Specification for Standard Rib Tire for Pavement Skid-Resistance Tests

3. Terminology

3.1 *Definitions:*

3.1.1 *initial friction value (PV-i)*—the initial British Pendulum Tester readings on the test specimens before they are polished in the accelerated polishing machine.

3.1.2 *polish value (PV-n)*—a measure of the state of polish reached by a test specimen subjected to the specified hours (n) of accelerated polishing using the materials, equipment, and procedures described in this method. The measurement is made using the British pendulum tester as described in 5.3 and Test Method E303.

3.1.3 *residual polish value, (RPV-n)*—the residual polish value is obtained when a constant PV-n is achieved four consecutive times with repeated swings of the pendulum.

4. Significance and Use

4.1 This practice simulates the polishing action of vehicular traffic on coarse aggregates used in bituminous pavements.

4.2 A polish value is determined that may be used to rate or classify coarse aggregates for their ability to resist polishing under traffic.

NOTE 1—The quality of the results produced by this standard are dependant upon the competence of the personnel performing the procedure and the capability, calibration, and the maintenance of the equipment used. Agencies that meet the criteria of Specification D3666 are generally considered capable of competent and objective testing, sampling, inspection, etc. Users of this standard are cautioned that compliance with Specification D3666 alone does not completely ensure reliable results. Reliable results depend on many factors: following the suggestions of Specification D3666 or similar acceptable guideline provides a means of evaluating and controlling some of those factors.

¹ This practice is under the jurisdiction of ASTM Committee D04 on Road and Paving Materials and is the direct responsibility of Subcommittee D04.51 on Aggregate Tests.

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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.