



Designation: D5444 – 23

Standard Test Method for Mechanical Size Analysis of Extracted Aggregate¹

This standard is issued under the fixed designation D5444; 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 test method covers a procedure for determination of the particle size distribution of fine and coarse aggregates extracted from asphalt mixtures using sieves with square openings.

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

[C670 Practice for Preparing Precision and Bias Statements for Test Methods for Construction Materials](#)

[D2172/D2172M Test Methods for Quantitative Extraction of Asphalt Binder from Asphalt Mixtures](#)

[D3666 Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials](#)

[D6307 Test Method for Asphalt Content of Asphalt Mixture by Ignition Method](#)

[E11 Specification for Woven Wire Test Sieve Cloth and Test Sieves](#)

¹ This test method 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.

Current edition approved May 1, 2023. Published May 2023. Originally approved in 1993. Last previous edition approved in 2015 as D5444 – 15. DOI: 10.1520/D5444-23.

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.

2.2 *AASHTO Standard:*³

[AASHTO Test Method T 30 Mechanical Analysis of Extracted Aggregate](#)

3. Significance and Use

3.1 This test method is used to determine the grading of aggregates extracted from asphalt mixtures. The results are used to determine compliance of the particle size distribution with applicable specifications requirements, and to provide necessary data for control of the production of various aggregates to be used in asphalt mixtures.

NOTE 1—The quality of the results produced by this standard are dependent on the competence of the personnel performing the procedure and the capability, calibration, and 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 some similar acceptable guideline provides a means of evaluating and controlling some of those factors.

4. Apparatus

4.1 *Balances*, or scales, readable to 0.1 g and accurate to 0.1 g or 0.1 % of the test load, whichever is greater, at any point within the range of use.

4.2 *Sieves*, with square openings, mounted on substantial frames constructed in a manner that will prevent the loss of materials during sieving. Suitable sieve sizes shall be selected to furnish the information required by the specifications covering the material to be tested. The woven wire cloth sieves shall conform to the requirements of Specification E11.

4.3 *Mechanical Sieve Shaker*—If used, it shall impart a vertical, or lateral and vertical, motion to the sieve, causing the particles thereon to bounce and turn so as to present different orientations to the sieving surface. The sieving action shall be such that the criterion for adequacy of sieving described in 6.8 is met in a reasonable time period.

4.4 *Oven*, of appropriate size, capable of maintaining a uniform temperature of 110 ± 5 °C.

³ Available from American Association of State Highway and Transportation Officials (AASHTO), 444 N. Capitol St., NW, Suite 249, Washington, DC 20001, <http://www.transportation.org>.