Designation: D5711 – 03

Standard Test Method for Determining the Adherent Coating on Coarse Aggregates[1]

This standard is issued under the fixed designation D5711; 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 is used to determine the adherent coating on coarse aggregate (aggregate retained on the 2.36-mm (No. 8) sieve) for the following purposes:

1.1.1 Preliminary investigation of mineral aggregate sources.

1.1.2 Control of mineral aggregates used in hot mix asphalt (HMA) pavements, seal coats, cover coats, surface treatments, cold mix asphalt, and portland cement concrete at the source of supply.

1.1.3 Control of mineral aggregate processing requirements.

1.1.4 Acceptance or rejection of aggregates based on adherent coating.

1.2 The values shown in SI units are to be regarded as the 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 and health practices and determine the applicability of regulatory limitations prior to use.*

NOTE 1—This test method is modeled after Federal Land Highways T 512-94.

2. Referenced Documents

2.1 *ASTM Standards:*[2]

C117 Test Method for Materials Finer than 75-µm (No. 200) Sieve in Mineral Aggregates by Washing

C136 Test Method for Sieve Analysis of Fine and Coarse Aggregates

C702 Practice for Reducing Samples of Aggregate to Testing Size

D75 Practice for Sampling Aggregates

D448 Classification for Sizes of Aggregate for Road and Bridge Construction

E11 Specification for Woven Wire Test Sieve Cloth and Test Sieves

3. Terminology

3.1 *Definitions:*

3.1.1 *adherent coating*, *n*—fine particles smaller than 75-µm (No. 200) that stick (adhere) to the coarse aggregate particles.

3.1.2 *coarse aggregate*, *n*—aggregate predominately retained on the 2.36-mm (No. 8) sieve.

4. Summary of Test Method

4.1 A sample of dry aggregate is separated on the 2.36-mm (No. 8) sieve. The mass of the material coarser than the 2.36-mm (No. 8) sieve is determined and the material is washed over a 75-µm (No. 200) sieve. After drying, the mass of the sample is again determined and compared to the original sample mass. The difference in the masses is determined and calculated as a percentage of the original mass and reported as adherent coating.

5. Significance and Use

5.1 This test method assigns a measurable value to the amount of fine material adhering to the aggregate.

6. Apparatus

6.1 *Balances*—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.

6.2 *Sieves*—37.5-mm (1.5-in.), 25-mm (1-in.), 19-mm (¾-in.), 12.5-mm (½-in.), 9.5-mm (⅜-in.), 4.75-mm (No. 4), 2.36-mm (No. 8), and 75-µm (No. 200) in accordance with the requirements of Specification E11.

6.3 *Mechanical Sieve Shaker*—A mechanical sieve shaker 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.

NOTE 2—Tyler Rotap, Soiltest model CL-305A and Rainhart 637 ("Maryann") shakers have been found to be acceptable.[3] Others that

[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.

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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.

[3] Available from W. S. Tyler, 3200 Bessemer City Road, Box 8900, Gastonia, NC 28053, and Soiltest Inc., 86 Albreicht Dr., P.O. Box 8004, Lake Bluff, IL 60044-8004.