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## Standard Method of Testing SOIL-BITUMINOUS MIXTURES<sup>1</sup>

This standard is issued under the fixed designation D 915; 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.

<sup>1</sup> NOTE—Section 2 was added editorially and subsequent sections renumbered in July 1984.

### 1. Scope

1.1 This method covers the determination of water absorption, expansion, and extrusion characteristics of compacted soil or soil-aggregate mixtures containing liquid bituminous material. The method is intended for determining the effects of water on these mixtures. It may also be employed to determine the same characteristics for untreated soil or soil-aggregate mixtures. The results are not intended for use in formulas to determine pavement thickness, nor to predict relative field performance of different bituminous materials as stabilization admixtures.

### 2. Applicable Documents

#### 2.1 ASTM Standards:

D95 Test Method for Water in Petroleum Products and Bituminous Materials by Distillation<sup>2</sup>

E 11 Specification for Wire-Cloth Sieves for Testing Purposes<sup>3</sup>

### 3. Apparatus

3.1 *Mechanical Mixer*,<sup>4</sup> capable of producing intimate mixtures of soil, water, and bituminous material.

3.2 *Compaction Apparatus*, as shown in Figs. 1 and 2, consisting of the following parts (Note 1):

3.2.1 *Compaction Mold*—A cylindrical hardened steel mold having an inside diameter of  $2.000 \pm 0.001$  in. ( $50.80 \pm 0.025$  mm), a length of 5.25 in. (133.35 mm), and an outside diameter of 2.5 in. (63.5 mm) or greater. The mold shall be equipped with a suitable device to control the specified drop and to protect the top

of the mold during precompaction with the tamper.

3.2.2 *Compaction Plungers*—One hardened steel plunger having a circular face,  $1.997 \pm 0.001$  in. ( $50.724 \pm 0.025$  mm) in diameter, and a length of 5.5 in. (139.70 mm); and one hardened steel plunger having a diameter of  $1.997 \pm 0.001$  in. and a length of 2.5 in. (63.5 mm).

3.2.3 *Tamper (Blade Type)*—The tamper shall be made of steel and shall have an overall length of 14½ in. (368.30 mm). For the upper 6 in. (152.40 mm) it shall be turned to a steel shank ⅜ in. (9.52 mm) in diameter and shall be fitted with a wooden handle 1⅜ in. (34.92 mm) in outside diameter. The flat blade shall be 8½ in. (208.25 mm) in length and shall be 1⅜ in. (34.92 mm) in width next to the handle and 1⅞ in. (47.62 mm) in width at the tamping end. The thickness of the flat blade shall be ⅝ in. (15.88 mm) at the handle and for a distance of 6½ in. (165.10 mm) below the handle. The lower 2 in. (51 mm) of the blade shall be ¼ in. (6.35 mm) in thickness, and the tamping edge shall be finished to a rounded edge. The total weight of the tamper shall be approximately 1200 g.

NOTE 1—The inside diameters of all compaction and extrusion test apparatus and the diameter of the testing end of the test plunger shall be checked period-

<sup>1</sup> This method is under the jurisdiction of ASTM Committee D-18 on Soil and Rock and is the direct responsibility of Subcommittee D18.15 on Stabilization with Admixtures.

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<sup>2</sup> *Annual Book of ASTM Standards*, Vol 05.01.

<sup>3</sup> *Annual Book of ASTM Standards*, Vol 14.02.

<sup>4</sup> The Model G Kitchen-Aid Mixer, the Model P-12 Readco Mixer, and the Model C Hobart Mixer with flat beaters are usually satisfactory.