



Designation: D 693 – 03

## Standard Specification for Crushed Aggregate for Macadam Pavements<sup>1</sup>

This standard is issued under the fixed designation D 693; 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 approval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

*This standard has been approved for use by agencies of the Department of Defense.*

### 1. Scope

1.1 This specification covers crushed aggregate suitable for use in the construction of dry- or water-bound macadam base courses and bituminous penetration macadam base and surface courses of pavements.

1.2 The values stated in SI units are to be regarded as standard. The inch-pound units, shown in parentheses, are for information only.

1.3 The text of this standard references notes and footnotes which provide explanatory material. These notes and footnotes (excluding those in tables and figures) shall not be considered as requirements of the standard.

### 2. Referenced Documents

#### 2.1 ASTM Standards:

- C 29/C 29M Test Method for Bulk Density (Unit Weight) and Voids in Aggregate<sup>2</sup>
- C 88 Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate<sup>2</sup>
- C 131 Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine<sup>2</sup>
- C 136 Test Method for Sieve Analysis of Fine and Coarse Aggregates<sup>2</sup>
- C 535 Test Method for Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine<sup>2</sup>
- D 75 Practice for Sampling Aggregates<sup>3</sup>
- D 448 Classification for Sizes of Aggregate for Road and Bridge Construction<sup>3</sup>
- D 3665 Practice for Random Sampling of Construction Materials<sup>3</sup>
- D 4318 Test Method for Liquid Limit, Plastic Limit, and

Plasticity Index of Soils<sup>4</sup>

- D 4791 Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate<sup>3</sup>
- D 5821 Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate<sup>3</sup>

### 3. Ordering Information

3.1 Orders for material under this specification shall include the following information:

- 3.1.1 Name of material (Crushed Aggregate for Macadam Construction),
- 3.1.2 ASTM designation (D 693 and year of issue),
- 3.1.3 Grading (Size Number) to be furnished (see 5.7 and Note 2),
- 3.1.4 Whether to be used in base course or surface course (see 5.1),
- 3.1.5 Whether for dry- or waterbound construction, or bituminous construction (see 5.4),
- 3.1.6 Quantity required, and
- 3.1.7 Special requirements.

### 4. General Characteristics

4.1 *Crushed Stone or Crushed Gravel*—The crushed stone or crushed gravel shall consist of reasonably clean, tough, durable fragments.

4.2 *Crushed Slag*—The crushed slag shall be air-cooled blast-furnace slag and shall consist of fragments reasonably clean, tough, durable, and consistent in density and quality.

4.3 *Choking Material for Dry- or Water-bound Macadam Base Courses*—The choking material shall consist of natural sand or the fine product resulting from crushing coarse aggregate.

### 5. Physical Requirements

5.1 *Degradation*—The aggregates (with the exception of Crushed Slag) shall conform to the following requirements:

	Base courses	Surface courses
Loss, Los Angeles Machine, max., %	50	40

<sup>1</sup> This method is under the jurisdiction of ASTM Committee D04 on Road and Paving Materials and is the direct responsibility of Subcommittee D04.50 on Aggregate Specifications.

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<sup>2</sup> *Annual Book of ASTM Standards*, Vol 04.02.

<sup>3</sup> *Annual Book of ASTM Standards*, Vol 04.03.

<sup>4</sup> *Annual Book of ASTM Standards*, Vol 04.08.