



**Designation: C 33 – 02a**

## **Standard Specification for Concrete Aggregates<sup>1</sup>**

This standard is issued under the fixed designation C 33; 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.

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

### **1. Scope \***

1.1 This specification defines the requirements for grading and quality of fine and coarse aggregate (other than lightweight or heavyweight aggregate) for use in concrete.<sup>2</sup>

1.2 This specification is for use by a contractor, concrete supplier, or other purchaser as part of the purchase document describing the material to be furnished.

NOTE 1—This specification is regarded as adequate to ensure satisfactory materials for most concrete. It is recognized that, for certain work or in certain regions, it may be either more or less restrictive than needed. For example, where aesthetics are important, more restrictive limits may be considered regarding impurities that would stain the concrete surface. The specifier should ascertain that aggregates specified are or can be made available in the area of the work, with regard to grading, physical, or chemical properties, or combination thereof.

1.3 This specification is also for use in project specifications to define the quality of aggregate, the nominal maximum size of the aggregate, and other specific grading requirements. Those responsible for selecting the proportions for the concrete mixture shall have the responsibility of determining the proportions of fine and coarse aggregate and the addition of blending aggregate sizes if required or approved.

1.4 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.5 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 this standard.

### **2. Referenced Documents**

#### **2.1 ASTM Standards:**

C 29/C 29M Test Method for Bulk Density ("Unit Weight") and Voids in Aggregate<sup>3</sup>

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee C09 on Concrete and Concrete Aggregates and is the direct responsibility of Subcommittee C09.20 on Normal Weight Aggregates.

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<sup>2</sup> For lightweight aggregates, see Specifications C 331, C 332, and C 330; for heavyweight aggregates see Specification C 637 and Descriptive Nomenclature C 638.

<sup>3</sup> Annual Book of ASTM Standards, Vol 04.02.

C 40 Test Method for Organic Impurities in Fine Aggregates for Concrete<sup>3</sup>

C 87 Test Method for Effect of Organic Impurities in Fine Aggregate on Strength of Mortar<sup>3</sup>

C 88 Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate<sup>3</sup>

C 117 Test Method for Material Finer than 75-μm (No. 200) Sieve in Mineral Aggregates by Washing<sup>3</sup>

C 123 Test Method for Lightweight Particles in Aggregate<sup>3</sup>

C 125 Terminology Relating to Concrete and Concrete Aggregates<sup>3</sup>

C 131 Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine<sup>3</sup>

C 136 Test Method for Sieve Analysis of Fine and Coarse Aggregates<sup>3</sup>

C 142 Test Method for Clay Lumps and Friable Particles in Aggregates<sup>3</sup>

C 150 Specification for Portland Cement<sup>4</sup>

C 227 Test Method for Potential Alkali Reactivity of Cement-Aggregate Combinations (Mortar-Bar Method)<sup>3</sup>

C 289 Test Method for Potential Alkali-Silica Reactivity of Aggregates (Chemical Method)<sup>3</sup>

C 294 Descriptive Nomenclature for Constituents of Concrete Aggregates<sup>3</sup>

C 295 Guide for Petrographic Examination of Aggregates for Concrete<sup>3</sup>

C 311 Test Methods for Sampling and Testing Fly Ash or Natural Pozzolans for Use as a Mineral Admixture in Portland-Cement Concrete<sup>3</sup>

C 330 Specification for Lightweight Aggregates for Structural Concrete<sup>3</sup>

C 331 Specification for Lightweight Aggregates for Concrete Masonry Units<sup>3</sup>

C 332 Specification for Lightweight Aggregates for Insulating Concrete<sup>3</sup>

C 342 Test Method for Potential Volume Change of Cement-Aggregate Combinations<sup>5</sup>

C 441 Test Method for Effectiveness of Mineral Admixtures or Ground Blast-Furnace Slag in Preventing Excessive

<sup>4</sup> Annual Book of ASTM Standards, Vol 04.01.

<sup>5</sup> Discontinued; see 2001 Annual Book of ASTM Standards, Vol 04.02.

**\*A Summary of Changes section appears at the end of this standard.**