



Designation: D2940/D2940M – 15

# Standard Specification for Graded Aggregate Material For Bases or Subbases for Highways or Airports<sup>1</sup>

This standard is issued under the fixed designation D2940/D2940M; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

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

## 1. Scope

1.1 This specification covers quality-controlled graded aggregates that, when hauled to and properly spread and compacted on a prepared grade to appropriate density standards, may be expected to provide adequate stability and load support for use as highway or airport bases or subbases.

NOTE 1—The engineer is cautioned to provide appropriate construction specifications to ensure compaction to an extent that further densification from traffic loadings on the completed pavement will be insignificant. The method suggested is to require compaction on a firm foundation of a short control strip of the material at a suitable moisture content, by means of vibratory or other proven effective rollers or tampers, until no further increase in density results. Compaction requirements should ensure that an average density of certain appropriate percentages of the control strip maximum density be achieved on the balance of the job; for base courses, 98% is suggested as the minimum average requirement.

1.2 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

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.

1.4 *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.*

<sup>1</sup> This specification 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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## 2. Referenced Documents

### 2.1 ASTM Standards:<sup>2</sup>

C136 Test Method for Sieve Analysis of Fine and Coarse Aggregates

D75 Practice for Sampling Aggregates

D422 Test Method for Particle-Size Analysis of Soils

D2419 Test Method for Sand Equivalent Value of Soils and Fine Aggregate

D4318 Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils

D4792 Test Method for Potential Expansion of Aggregates from Hydration Reactions

D5821 Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate

E105 Practice for Probability Sampling of Materials

E122 Practice for Calculating Sample Size to Estimate, With Specified Precision, the Average for a Characteristic of a Lot or Process

## 3. General Requirements

3.1 Coarse aggregate retained on the 4.75-mm (No. 4) sieve shall consist of durable particles of crushed stone, gravel, or slag capable of withstanding the effects of handling, spreading, and compacting without degradation productive of deleterious fines. Of the particles which are retained on a 9.5-mm [ $\frac{3}{8}$ -in.] sieve, at least 75% shall have two or more fractured faces.

NOTE 2—No standard ASTM method is recognized to be capable of measuring the quality, or tendency of coarse aggregate to degrade to the extent that deleterious fines may be produced. Some local jurisdictions have developed tests believed to be of value in this respect. The purchaser of material under this specification is advised to investigate the availability and reliability of such tests in order to specify quality requirements appropriate to the local area.

3.1.1 The fractured particle requirement of 3.1 is modified when specified in the contract documents, providing for the use

<sup>2</sup> 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.