



Standard Practice for Open-Graded Friction Course (OGFC) Mix Design¹

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1. Scope

1.1 This practice covers the mix design of open-graded friction course (OGFC) using the superpave gyratory compactor (SGC) or other suitable forms of compaction. The OGFC mix design is based on the volumetric properties of the mix in terms of air voids, and the presence of stone-on-stone contact. Information found in Guide D6932 should be reviewed before starting the mix design. Where applicable, Specification D3666 should be applied as a minimum for agencies testing and inspecting road and paving materials.

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 *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.*

2. Referenced Documents

2.1 ASTM Standards:²

- C29/C29M Test Method for Bulk Density (“Unit Weight”) and Voids in Aggregate
- C127 Test Method for Density, Relative Density (Specific Gravity), and Absorption of Coarse Aggregate
- C131 Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
- C136 Test Method for Sieve Analysis of Fine and Coarse Aggregates

¹ This practice is under the jurisdiction of ASTM Committee D04 on Road and Paving Materials and is the direct responsibility of Subcommittee D04.23 on Plant-Mixed Bituminous Surfaces and Bases.

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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.

- C1252 Test Methods for Uncompacted Void Content of Fine Aggregate (as Influenced by Particle Shape, Surface Texture, and Grading)
- D946 Specification for Penetration-Graded Asphalt Cement for Use in Pavement Construction
- D2041 Test Method for Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
- D2419 Test Method for Sand Equivalent Value of Soils and Fine Aggregate
- D3203 Test Method for Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures
- D3381 Specification for Viscosity-Graded Asphalt Cement for Use in Pavement Construction
- D3666 Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials
- D4791 Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
- D5821 Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate
- D6114 Specification for Asphalt-Rubber Binder
- D6373 Specification for Performance Graded Asphalt Binder
- D6390 Test Method for Determination of Draindown Characteristics in Uncompacted Asphalt Mixtures
- D6752 Test Method for Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Automatic Vacuum Sealing Method
- D6857 Test Method for Maximum Specific Gravity and Density of Bituminous Paving Mixtures Using Automatic Vacuum Sealing Method
- D6925 Test Method for Preparation and Determination of the Relative Density of Hot Mix Asphalt (HMA) Specimens by Means of the Superpave Gyratory Compactor
- D6926 Practice for Preparation of Bituminous Specimens Using Marshall Apparatus
- D6932 Guide for Materials and Construction of Open-Graded Friction Course Plant Mixtures

2.2 AASHTO Standards:³

- R 30 Mixture Conditioning of Hot Mix Asphalt (HMA)
- T 283 Resistance of Compacted Bituminous Mixture to

³ Available from American Association of State Highway and Transportation Officials (AASHTO), 444 N. Capitol St., NW, Suite 249, Washington, DC 20001, <http://www.transportation.org>.