
Standard Specification for Stone Matrix Asphalt (SMA)

AASHTO Designation: M 325-08 (2021)¹

Adopted: 2008

Reviewed but Not Updated: 2021

**Technical Subcommittee: 2d, Proportioning
of Asphalt–Aggregate Mixtures**



**American Association of State Highway and Transportation Officials
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1. SCOPE

- 1.1. This specification covers the design of stone matrix asphalt (SMA) using the Superpave gyratory compactor (SGC). The SMA design is based on the volumetric properties of the SMA in terms of air voids (V_a), the voids in mineral aggregate (VMA), and the presence of stone-on-stone contact.
- 1.2. This standard specifies minimum quality requirements for asphalt binder, aggregate, mineral filler, and stabilizing additives for SMA mixture designs.
- 1.3. The values stated in SI units are to be regarded as the standard. The U.S. Customary units in parentheses are for information only.
- 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.*
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2. REFERENCED DOCUMENTS

- 2.1. *AASHTO Standards:*
- M 320, Performance-Graded Asphalt Binder
 - M 323, Superpave Volumetric Mix Design
 - R 46, Designing Stone Matrix Asphalt (SMA)
 - T 85, Specific Gravity and Absorption of Coarse Aggregate
 - T 89, Determining the Liquid Limit of Soils
 - T 90, Determining the Plastic Limit and Plasticity Index of Soils
 - T 96, Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
 - T 104, Soundness of Aggregate by Use of Sodium Sulfate or Magnesium Sulfate
 - T 283, Resistance of Compacted Asphalt Mixtures to Moisture-Induced Damage
 - T 305, Determination of Drained Characteristics in Uncompacted Asphalt Mixtures
 - T 312, Preparing and Determining the Density of Asphalt Mixture Specimens by Means of the Superpave Gyratory Compactor
- 2.2. *ASTM Standards:*
- D4791, Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
 - D5821, Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate