
Standard Specification for High-Reactivity Pozzolans for Use in Hydraulic-Cement Concrete, Mortar, and Grout

AASHTO Designation: M 321-04 (2021)

Technically Revised: 2004

Reviewed but Not Updated: 2021

Technical Subcommittee: 3a, Cement, Lime, and Concrete Materials



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

- 1.1. This specification covers high-reactivity pozzolans for use as a mineral admixture in portland cement concrete and mortar to fill small voids and/or where pozzolanic action is desired. High-reactivity pozzolans are microsilica products with a particle size typically one to two orders of magnitude smaller than portland cement. These materials are usually supplied in undensified or densified dry form. If the material is supplied in a densified form, the tests should be performed on the as-collected undensified material before being processed into densified form.
- 1.2. The values stated in SI units are to be regarded as 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 to determine the applicability of regulatory limitations prior to use. Read the material safety data sheets for materials used. This standard is not intended for specifying silica fume as defined in Section 3.3. It is recommended that M 307 or ASTM C1240 be used for that purpose.*
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2. REFERENCED DOCUMENTS

- 2.1. *AASHTO Standards:*
- M 307, Silica Fume Used in Cementitious Mixtures
 - T 105, Chemical Analysis of Hydraulic Cement
- 2.2. *ASTM Standards:*
- C109/C109M, Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens)
 - C185, Standard Test Method for Air Content of Hydraulic Cement Mortar
 - C311/C311M, Standard Test Methods for Sampling and Testing Fly Ash or Natural Pozzolans for Use in Portland-Cement Concrete
 - C441/C441M, Standard Test Method for Effectiveness of Pozzolans or Ground Blast-Furnace Slag in Preventing Excessive Expansion of Concrete Due to the Alkali-Silica Reaction
 - C1012/C1012M, Standard Test Method for Length Change of Hydraulic-Cement Mortars Exposed to a Sulfate Solution
 - C1240, Standard Specification for Silica Fume Used in Cementitious Mixtures