
Standard Method of Test for

**Quantitative Determination of the
Percentage of Lime in Hot Mix
Asphalt (HMA)**

AASHTO Designation: TP 72-08 (2015)¹



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1. SCOPE

- 1.1. This method covers the quantitative determination of the percentage of lime in hot mix asphalt (HMA) by calculation of the calcium hydroxide, $\text{Ca}(\text{OH})_2$, recovered from a sample of the mixture. A specimen is obtained through drilling into the HMA and collecting the drilling dust. The specimen is subjected to an acid filter boil and wash and is analyzed using either Atomic Absorption (AA) Spectrometry or Ion Exchange Chromatography (IEC).
- 1.2. *This standard may involve hazardous materials, operations, and equipment. 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. *AASHTO Standards:*
- M 231, Weighing Devices Used in the Testing of Materials
 - T 308, Determining the Asphalt Binder Content of Hot Mix Asphalt (HMA) by the Ignition Method
- 2.2. *ASTM Standard:*
- C25, Standard Test Methods for Chemical Analysis of Limestone, Quicklime, and Hydrated Lime

3. SIGNIFICANCE AND USE

- 3.1. This test method is useful for determining the amount of lime added to an HMA mixture.
- 3.2. If the coarse aggregate contains limestone, the limestone aggregate will be dissolved by the acid used in this method and can yield an unrealistically high result. If limestone is present in a relatively minor amount, it is possible to run a background analysis on the raw aggregate. An adjustment can then be made based on the background analysis in order to better approximate the actual results. If the aggregate in the HMA contains an appreciable amount of limestone, this test method is not suitable. Depending upon the concentration, the calcium content of any added lime could be masked by the aggregate concentration. This effect would lead to a significant error in overestimation of the amount of lime added.