



Designation: C1097 – 13

# Standard Specification for Hydrated Lime for Use in Asphalt Cement or Bituminous Paving Mixtures<sup>1</sup>

This standard is issued under the fixed designation C1097; 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.

## 1. Scope

1.1 This specification covers high calcium, dolomitic and magnesian-hydrated lime for use in asphalt cement or bituminous paving mixtures.

NOTE 1—Hydrated lime, either calcitic, dolomitic, or magnesian, improves bonding of bitumen and aggregates which reduces susceptibility to moisture damage, reduces age hardening by chemically stabilizing polar compounds found in asphalts, and increases initial stiffness of asphalt mixtures.

NOTE 2—No attempt is made to present requirements for any by-product lime.

1.2 *This standard does not purport to address the safety concerns 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:*<sup>2</sup>

[C25 Test Methods for Chemical Analysis of Limestone, Quicklime, and Hydrated Lime](#)

[C50 Practice for Sampling, Sample Preparation, Packaging, and Marking of Lime and Limestone Products](#)

[C51 Terminology Relating to Lime and Limestone \(as used by the Industry\)](#)

[C110 Test Methods for Physical Testing of Quicklime, Hydrated Lime, and Limestone](#)

[C1271 Test Method for X-ray Spectrometric Analysis of Lime and Limestone](#)

[C1301 Test Method for Major and Trace Elements in Limestone and Lime by Inductively Coupled Plasma-Atomic Emission Spectroscopy \(ICP\) and Atomic Absorption \(AA\)](#)

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee C07 on Lime and is the direct responsibility of Subcommittee C07.02 on Specifications and Guidelines.

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<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.

[D8 Terminology Relating to Materials for Roads and Pavements](#)

[D242 Specification for Mineral Filler For Bituminous Paving Mixtures](#)

[D546 Test Method for Sieve Analysis of Mineral Filler for Bituminous Paving Mixtures](#)

## 3. Terminology

3.1 For definitions of terms used in this specification, refer to Terminology [C51](#) or Terminology [D8](#).

## 4. Chemical Requirements

4.1 Hydrated lime for use in asphalt cement or bituminous paving mixtures shall conform to the following chemical composition:

Calcium and Magnesium Oxides (on an LOI-free basis), min, %	90.0
Carbon Dioxide (taken at point of manufacture), max, %	5.0
Unhydrated Calcium and Magnesium Oxides, max, %	5.0
Free Moisture of Dry Hydrates (taken at point of manufacture), max, %	2.0

4.2 The chemical analysis of the hydrated lime shall be determined in accordance with Test Methods [C25](#), [C1271](#), or [C1301](#).

## 5. Physical Requirements

5.1 Hydrated lime, either dry or slurry form, shall not have more than 3.0 % retained on a 600  $\mu\text{m}$  (No. 30) sieve and not more than 30 % retained on a 75  $\mu\text{m}$  (No. 200) sieve.

NOTE 3—Specification [D242](#) also contains physical specifications for hydrated lime. Specification [D242](#) includes four size gradations, expressed as percent passing the sieve. For the two size gradations included in both Specification [D242](#) and Specification C1097, the specifications are the same.

5.2 The particle size of hydrated lime shall be determined in accordance with Test Methods [C110](#).

NOTE 4—Some hydrated limes may require a full 30-min wash time.

NOTE 5—The Test Methods [C110](#) method for particle size analysis is required instead of the Test Method [D546](#) method because the Test