



Designation: C5 – 03 (Reapproved 2009)

# Standard Specification for Quicklime for Structural Purposes<sup>1</sup>

This standard is issued under the fixed designation C5; 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.

*This standard has been approved for use by agencies of the Department of Defense.*

## 1. Scope

1.1 This specification covers all classes of quicklime such as crushed lime, granular lime, ground lime, lump lime, pebble lime, and pulverized lime, used for structural purposes.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered 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:*<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

**C1489** Specification for Lime Putty for Structural Purposes

**E11** Specification for Woven Wire Test Sieve Cloth and Test Sieves

## 3. Terminology

3.1 *Definitions*—Unless otherwise specified, for definitions of terms used in this standard, refer to Terminology **C51**.

<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.

## 4. Chemical Composition

4.1 The quicklime shall conform to the following requirements as to chemical composition, calculated on a nonvolatile basis:

	Calcium Lime	Magnesium Lime
Calcium oxide, min, %	75	
Magnesium oxide, min, %		20
Calcium and magnesium oxide, min, %	95	95
Silica, alumina, and oxide of iron, max, %	5	5
Carbon dioxide, max, %:		
If sample is taken at place of manufacture	3	3
If sample is taken at any other place	10	10

## 5. Residue

5.1 The quicklime shall contain no more than 15 weight % of residue.

## 6. General Requirements

6.1 Quicklime shall be slaked and aged in accordance with the printed directions of the manufacturer. The resulting lime putty shall be stored until cool.

6.2 Lime putty prepared in accordance with Appendix **X1.4.2** must conform to the requirements of Specification **C1489**.

## 7. Sampling, Inspection, etc.

7.1 The sampling, inspection, rejection, retesting, packaging, and marking shall be conducted in accordance with Methods **C50**.

## 8. Test Methods

8.1 Conformance to chemical requirements shall be determined in accordance with Test Methods **C25**.

8.2 Conformance to plasticity and residue requirements shall be determined in accordance with Test Methods **C110**.

## 9. Keywords

9.1 building (structural); calcium oxide; dolomitic lime; high calcium lime; lime putty; magnesium oxide; plasticity; quicklime; residue; slaking