



Designation: C5 – 03

Standard Specification for Quicklime for Structural Purposes¹

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 (ϵ) 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.

2. Referenced Documents

2.1 *ASTM Standards:*²

[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](#).

4. Chemical Composition

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

¹ This specification is under the jurisdiction of ASTM Committee C07 on Lime and is the direct responsibility of Subcommittee C07.02 on Structural Lime.

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² 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.

| | 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