Designation: C141 – 97 (Reapproved 2005)

Standard Specification for
Hydraulic Hydrated Lime for Structural Purposes[1]

This standard is issued under the fixed designation C141; 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 hydraulic hydrated lime for structural purposes.

1.2 Hydraulic hydrated lime may be used in the scratch or brown coat of plaster, stucco, mortar, or in portland-cement concrete either as blend, amendment, or admixture.

1.3 The values stated in inch-pound units are to be regarded as the standard.

1.4 The following precautionary caveat pertains only to the test method portion, Section 10 of this specification: *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:*[2]

C25 Test Methods for Chemical Analysis of Limestone, Quicklime, and Hydrated Lime

C109/C109M Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens)

C150 Specification for Portland Cement

C151 Test Method for Autoclave Expansion of Hydraulic Cement [3]

C184 Test Method for Fineness of Hydraulic Cement by the 150-μm (No. 100) and 75-μm (No. 200) Sieves[4]

C187 Test Method for Normal Consistency of Hydraulic Cement

C230/C230M Specification for Flow Table for Use in Tests of Hydraulic Cement

C266 Test Method for Time of Setting of Hydraulic-Cement Paste by Gillmore Needles

C305 Practice for Mechanical Mixing of Hydraulic Cement Pastes and Mortars of Plastic Consistency

C778 Specification for Standard Sand

E11 Specification for Woven Wire Test Sieve Cloth and Test Sieves

3. Terminology

3.1 *Definitions:*

3.1.1 *hydraulic hydrated lime*—the hydrated dry cementitious product obtained by calcining a limestone containing silica and alumina, or a synthetic mixture of similar composition, to a temperature short of incipient fusion so as to form sufficient free lime (CaO) to permit hydration and at the same time leaving unhydrated sufficient calcium silicates to give the dry powder, meeting the requirements herein prescribed, its hydraulic properties.

NOTE 1—The purchaser may increase the hydraulicity by the addition of pulverized portland cement clinker, or a pulverized pozzolan, either natural or artificial.

3.1.1.1 *high calcium hydraulic hydrated lime*—a lime that contains not more than 5 % magnesium oxide (of the nonvolatile portion).

3.1.1.2 *magnesium hydraulic hydrated lime*— a lime containing more than 5 % magnesium oxide (of the nonvolatile portion).

4. Chemical Composition

4.1 The hydraulic hydrated lime shall conform to the following requirements as to chemical composition, calculated to the nonvolatile basis:

	Min	Max
Calcium and magnesium oxides (CaO and MgO calculated to the nonvolatile basis), %	65	75
Silica (SiO_2 calculated to the nonvolatile basis), %	16	26

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