



Standard Specification for Gypsum Keene's Cement¹

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

1. Scope *

1.1 This specification covers various grades of anhydrous calcined gypsum known as gypsum Keene's cement, designed for use in the base and finish coats of gypsum plaster.

NOTE 1—The setting time is accelerated by the addition of other materials.

NOTE 2—Keene's cements are generally available as quick-setting and standard-setting types. However, various grades of gypsum Keene's cement of different fineness and setting time are available. Grades intended for use in scagliola castings and other special purposes should conform to the requirements of this specification in all respects except fineness and setting time.

1.2 The values stated in either inch-pound or SI (metric) units are to be regarded separately as standard. Within the text, the SI units are shown in brackets. The values stated in each system shall be used independently of the other. Values from the two systems shall not be combined.

1.3 The text of this standard references notes and footnotes that provide explanatory material. These notes and footnotes shall not be considered as requirements of the standard.

1.4 The following safety hazards caveat pertains only to the test method in the appendix 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:

- C 11 Terminology Relating to Gypsum and Related Building Materials and Systems²
- C 471 Test Methods for Chemical Analysis of Gypsum and Gypsum Products²
- C 472 Test Methods for Physical Testing of Gypsum, Gypsum Plasters, and Gypsum Concrete²
- E 11 Specification for Wire-Cloth and Sieves for Testing Purposes²

¹ This specification is under the jurisdiction of ASTM Committee C11 on Gypsum and Related Building Materials and Systems and is the direct responsibility of Subcommittee C11.01 on Specifications and Test Methods for Gypsum Products.

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² Annual Book of ASTM Standards, Vol 04.01.

3. Terminology

3.1 *Definitions*—Definitions of terms used in this specification shall be as defined in Terminology C 11.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *scagliola, n*—an imitation marble used for ornamental interior work.

4. Chemical Composition

4.1 *Combined Water*—The cement shall show a combined water content not more than 2 % when tested in accordance with Test Methods C 471.

5. Physical Properties

5.1 Testing shall be in accordance with Test Methods C 472, except that in the determination of the setting time and compressive strength, the consistency used shall be such that a 35-g conical plunger, described in Test Methods C 472, shall give a penetration of 30 ± 2 mm, 20 s after release, the measurement being made 5 min after the addition of the gypsum Keene's cement to the gauging water.

5.1.1 *Setting Time*—The cement shall set in not less than 20 min and not more than 6 h when determined by the Vicat method.

5.1.2 *Compressive Strength*—Gypsum Keene's cement shall have a compressive strength of not less than 2500 psi [17 MPa]. Soak standard Keene's cement in water for 20 min with occasional stirring before filling the mold in the compressive strength determination.

5.1.3 *Fineness*—The cement shall all pass a No. 14 [1.40 mm] sieve; not less than 98 % shall pass a No. 40 [425-μm] sieve, and not less than 80 % shall pass a No. 100 [150-μm] sieve.³

6. Sampling

6.1 Randomly select not less than 1 % of the packages, but not less than 5 packages. Take samples of approximately equal amounts from both the outer portion and the center of each package. Mix the samples so obtained to provide a composite sample of not less than 15 lb [6.8 kg]. Immediately place the sample in a clean, dry, airtight container for delivery to the laboratory.

³ Detailed requirements for these sieves are given in ASTM Specification E 11.

***A Summary of Changes section appears at the end of this standard.**