



Standard Test Methods for Chemical Resistance of Mortars, Grouts, and Monolithic Surfacings and Polymer Concretes¹

This standard is issued under the fixed designation C 267; 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 These test methods are intended for use as a relatively rapid test to evaluate the chemical resistance of resin, silica, silicate, sulfur, and hydraulic materials, grouts, monolithic surfacings, and polymer concretes under anticipated service conditions. These test methods provide for the determination of changes in the following properties of the test specimens and test medium after exposure of the specimens to the medium:

- 1.1.1 Weight of specimen,
- 1.1.2 Appearance of specimen,
- 1.1.3 Appearance of test medium, and
- 1.1.4 Compressive strength of specimens.

NOTE 1—These test methods have been found to be unsatisfactory for evaluation of furan and phenolic mortars in hydrofluoric acid in concentrations above 35 %. Although the mortars may perform well in service, the test specimens generally fail by cracking when tested at such high hydrofluoric acid concentrations by these test methods.

1.2 Test Method A outlines the testing procedure generally used for systems containing aggregate less than 0.0625 in. (1.6 mm) in size. Test Method B covers the testing procedure generally used for systems containing aggregate from 0.0625 to 0.4 in. (1.6 to 1.0 mm) in size. Test Method C is used for systems containing aggregate larger than 0.4 in.

1.3 The units stated are to be regarded as standard. The values given in parentheses are for information only.

1.4 *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 470 Specifications for Molds for Forming Concrete Test Cylinders Vertically²
- C 579 Test Methods for Compressive Strength of Chemical-

Resistant Mortars, Grouts, Monolithic Surfacings, and Polymer Concretes³

C 904 Terminology Relating to Chemical-Resistant Non-metallic Materials³

C 1312 Practice for Making and Conditioning Chemical-Resistant Sulfur Polymer Cement Concrete Test Specimens in the Laboratory³

E 4 Practices for Force Verification of Testing Machines⁴

3. Terminology

3.1 *Definitions*—For definitions of terms used in these test methods, see Terminology C 904.

4. Significance and Use

4.1 The results obtained by these test methods should serve as a guide in, but not as the sole basis for, selection of a chemical-resistant material for a particular application. No attempt has been made to incorporate into these test methods all the various factors that may affect the performance of a material when subjected to actual service. The strength values obtained by these test methods should not be used to evaluate the compressive strength of chemical-resistant materials. The appropriate ASTM test method for the specific material should be used for determining and evaluating the compressive strength.

5. Apparatus

5.1 *Equipment*, capable of weighing materials or specimens to ± 0.3 % accuracy.

5.2 *Equipment for Mixing*, consisting of a container of suitable size, preferably made of corrosion-resistant metal, or a porcelain pan, and a strong, sturdy spatula or trowel.

5.3 Specimen Molds:

5.3.1 *Test Method A*—These molds shall be right cylinder $1 \pm \frac{1}{32}$ in. (25 ± 0.8 mm) in diameter by $1 \pm \frac{1}{32}$ in. high. The molds may be constructed in any manner that will allow formation of a test specimen of the desired size. Typical molds consist of a 1-in. thick, flat plastic sheet in which 1-in. diameter, smooth-sided holes have been cut, and to the bottom of which a $\frac{1}{4}$ -in. (6-mm) thick, flat plastic sheet (without

¹ These test methods are under the jurisdiction of ASTM Committee C-3 on Chemical-Resistant Nonmetallic Materials and are the direct responsibility of Subcommittee C03.01 on Test Methods.

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² Annual Book of ASTM Standards, Vol 04.02.

³ Annual Book of ASTM Standards, Vol 04.05.

⁴ Annual Book of ASTM Standards, Vol 03.01.