Designation: ~~C308 – 00 (Reapproved 2012)$^{\varepsilon 1}$~~ C308 – 18

Standard ~~Test Methods~~ Practice for Working, Initial Setting, and Service Strength Setting Times of Chemical-Resistant Resin Mortars[1]

This standard is issued under the fixed designation C308; 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.

~~ε^1 NOTE—Units information was corrected editorially in September 2012.~~

~~1. Scope~~

~~1.1 These test methods cover the determination of the working, initial setting, and service strength setting times of chemical-resistant resin mortars.~~

~~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:*[2]~~
~~C279 Specification for Chemical-Resistant Masonry Units~~
~~C307 Test Method for Tensile Strength of Chemical-Resistant Mortar, Grouts, and Monolithic Surfacings~~
~~C904 Terminology Relating to Chemical-Resistant Nonmetallic Materials~~

~~3. Terminology~~

~~3.1 *Definitions*—For definitions of terms used in these test methods, see Terminology C904.~~

~~4. Significance and Use~~

~~4.1 These test methods offer a means of determining the working time, initial setting time and service strength setting time of chemical-resistant resin mortars. The results obtained should serve as a guide in, but not as the sole basis for, selection of a chemical-resistant mortar for a particular application.~~

~~5. Apparatus~~

~~5.1 *Weighing Equipment*—Shall be capable of weighing materials or specimens to ±0.3 % accuracy.~~

~~5.2 *Mixing Equipment:*~~
~~5.2.1 *Porcelain Enameled Pan*—Measuring approximately 10 in. long by 16 in. wide by 2 in. deep (250 mm by 400 mm by 50 mm).~~
~~5.2.2 *Bricklayer's Triangular Trowel*—Approximately 4 in. (100 mm) in length.~~

~~5.3 *Bricks*—As per Specification C279, Type III.~~

~~5.4 *Vicat Apparatus*—The Vicat apparatus shall consist of a frame, A (see Fig. 1), bearing a movable rod, B, weighing 300 g, one end, C, the plunger end, being 10 mm in diameter for a distance of at least 50 mm and the other end having a removable steel needle, D, for initial setting time determination, 1 mm in diameter and 50 mm in length. The rod, B, is reversible, and can be held~~

[1] ~~These test methods are~~ This practice is under the jurisdiction of Committee D01 on Paint and Related Coatings, Materials, and Applications and ~~are~~is the direct responsibility of D01.46 on Industrial Protective Coatings.

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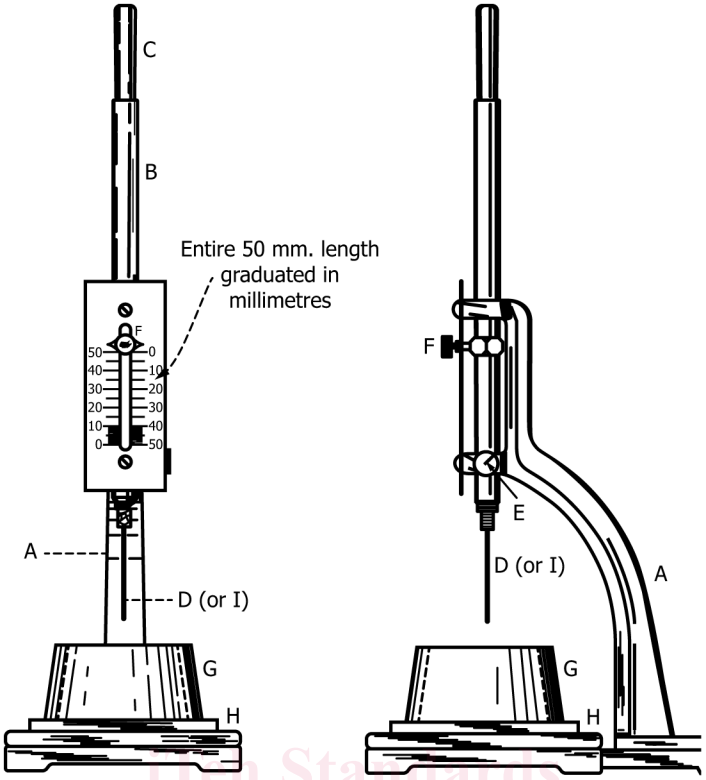
[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the ~~standard's~~standard's Document Summary page on the ASTM website.



NOTE 1—Ring, G, and plate, H, are not required for this test.

FIG. 1 Vicat Apparatus

in any desired position by a set screw, E, and has an adjustable indicator, F, which moves over a scale (graduated in millimetres) attached to the frame, A. In addition to the above, the Vicat apparatus shall conform to the following requirements:

5.4.1 *Weight of Plunger*—300 ± 0.5 g.

5.4.2 *Diameter of Larger End of Plunger*—10 ± 0.05 mm.

5.4.3 *Diameter of Needle*—1 ± 0.05 mm.

5.4.4 *Graduated Scale*—The graduated scale, when compared with a standard scale accurate to within 0.1 mm at all points, shall not show a deviation at any point greater than 0.25 mm.

6. Temperature

6.1 All materials used in this method shall be stored for at least 16 h prior to use at the standard test temperature of 73 ± 4°F (23 ± 2°C). The standard temperature for the working and initial setting time tests shall be 73 ± 4°F (23 ± 2°C). Other test temperatures are acceptable upon agreement between the manufacturer and user provided that they are reported with the test data.

7. Preparation of Mortar

7.1 Prepare a 1000-g sample of mortar, using proportionate amounts of filler and liquid as recommended by the manufacturer. If the proportions specified are by volume, weigh the materials and report the corresponding proportions by weight. Pour an appropriate amount of liquid into the pan, gradually add the powder to the liquid resin, and mix thoroughly with the trowel until a uniform mixture is obtained (this shall be complete within 3 min). Continue the mixing operation for 1 min after an apparently uniform mixture is obtained. Spread out the mortar in a layer of uniform thickness covering the entire surface of the mixing pan.

7.2 For a multicomponent resin mortar, the procedure described in 7.1 may be modified slightly to permit the addition of the catalyst to the mortar within the specified time limit.

8. Working Time

8.1 Remove approximately 25-g portions of the resin mortar at specific intervals and trowel on the horizontal surface of clean, dry freezer paper. In order that sufficient data will be obtained with the minimum quantity of material, it is recommended that the testing be done every 5 min until the material begins to curl behind the trowel. The sample shall be removed from a portion of the mortar located at least 2 in. (50 mm) from the side of the pan. The material used for tests shall not be returned to the mixing pan. The working time shall be recorded as the longest time (in minutes) at which the mortar does not curl behind the trowel.