



Designation: C325 – 07 (Reapproved 2022)

Standard Guide for Wet Sieve Analysis of Ceramic Whiteware Clays¹

This standard is issued under the fixed designation C325; 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.

1. Scope

1.1 This guide covers the wet sieve analysis of ceramic whiteware clays. This guide is intended for use in testing shipments of clay as well as for plant control tests.

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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

C322 Practice for Sampling Ceramic Whiteware Clays

E11 Specification for Woven Wire Test Sieve Cloth and Test Sieves

3. Apparatus

3.1 *Stirring Device*—A mechanical stirrer with a three-bladed propeller 2 in. (51 mm) in diameter and having a speed of approximately 1700 r/min, or the equivalent, shall be provided.

3.2 *Sieves*—The sieves shall conform to Specification E11 and shall include the No. 100 (150- μ m), No. 140 (106- μ m), No.

200 (75- μ m) and No. 325 (45- μ m) sieves (Note 1). The wire cloth for these sieves shall be woven (not twilled) and shall be mounted in circular metal frames 8 in. (203 mm) in diameter, which shall be so constructed as to permit nesting of two or more sieves. A pan and cover for the sieves shall be provided.

NOTE 1—Equivalent sieves from other standard series, such as the Tyler series, may also be used. If results are to be compared with those obtained with sieves from the ASTM series, it is important that the openings of the sieves used fall within the tolerances specified in Specification E11 for the corresponding ASTM sieves.

4. Sampling

4.1 The sample shall be obtained in accordance with Practice C322.

4.2 The sample as received shall be placed in a drying oven at 100 °C to 110 °C for a period of not less than 5 h prior to testing.

5. Procedure

5.1 Transfer duplicate portions, of approximately 250 g of the dried clay sample, weighed to the nearest 0.1 g, to containers of at least 2-L capacity. Wet the clay with 1 L of water and allow to slake for 2 h. If a free-flowing slurry is not produced by this treatment, add another 500 mL of water.

5.2 To ensure complete separation of clay from nonplastic impurities, agitate the slurry by means of a mechanical stirrer (3.1). Continue the stirring between 5 and 10 min.

5.3 Transfer the slaked and stirred sample, without loss, to the finest sieve to be employed in the test, and wash by means of a small jet of water from a 1/4-in. (6.4-mm) soft rubber hose attached to a water supply having a pressure not in excess of that of an ordinary city main. The force of the jet may be controlled by compressing the end of the hose between the thumb and forefinger. Take care to avoid loss of sample from splashing. Continue washing until water passing through the sieve shows only traces of sample. Should lumpy material remain on the screen, return the residue to the stirrer container by careful washing with a gentle jet of water, and agitate in approximately 1 L of water for 10 min, then wash the slurry as previously described.

5.4 Wash the residue remaining on the finest sieve into the pan. Thoroughly wet the remaining sieves to be used in the test with clear water, and nest them in the proper sequence on the

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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.