



Designation: D 185 – 84 (Reapproved 1999)

Standard Test Methods for Coarse Particles in Pigments, Pastes, and Paints¹

This standard is issued under the fixed designation D 185; 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 approval. 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 cover the determination of the amount of coarse particles in dry pigments and of coarse particles and skins in mixtures of pigments and vehicles.

1.2 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

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:*

E 11 Specification for Wire-Cloth Sieves for Testing Purposes²

3. Significance and Use

3.1 In production of paints, smoothness of the paint film is of paramount importance. Agglomerates or coarse particles larger than 45 μm are difficult to disperse and may prevent obtaining a smooth film. These test methods are a valuable quality control test for grading raw materials.

4. Apparatus

4.1 The apparatus shall consist of a 3-in. (75-mm) 45- μm (No. 325) sieve conforming to Specification E 11. A 3-in. 45- μm sieve for comparison purposes should be retained in the laboratory as a reference standard. Whenever a new sieve is secured, a practical test of its accuracy should be made by running on it and on the reference standard sieve a comparison test, using a pigment that has a considerable amount of coarse particles. A reserve stock of such a pigment should be kept for this purpose.

¹ These test methods are under the jurisdiction of ASTM Committee D-1 on Paint and Related Coatings, Materials, and Applications, and are the direct responsibility of Subcommittee D01.31 on Pigment Specifications.

Current edition approved Oct. 26, 1984. Published December 1984. Originally published as D 185–37. Last previous edition D 185–78.

² *Annual Book of ASTM Standards*, Vol 14.02.

5. Procedure for Insoluble Dry Pigments, Except Metallic Aluminum and Bronze Powders

5.1 Dry the sieve in an oven at $105 \pm 2^\circ\text{C}$, cool, and then weigh on an analytical balance, recording the weight to 1 mg.

5.2 Weigh a specimen (25 g for basic carbonate and basic sulfate white leads, 25 g for red lead and mercuric oxide, 2 g for black pigments of low specific gravity, 3 g for Prussian blues and graphite, and 10 g for all other pigments) of the pigment to be tested on an analytical balance to 1 mg. Wet the sieve on both sides with alcohol and transfer the specimen of pigment to the sieve and wet with alcohol.

5.3 Hold the sieve under a tap delivering about 300 to 500 mL of the wash liquid (water) per minute. By slightly shaking the sieve, the pigment will be rapidly carried through. A soft camel's-hair brush may be used in aiding the operation. If the sieve is held at a slight angle so that the pigment gradually collects at one edge during the washing process, and then rotated, the pigment may be brushed out rapidly, with no risk of clogging the sieve.

5.4 After most of the finely divided portion of the pigment has passed through the sieve (from 2 min to 1 h, according to the kind of pigment), place the sieve in an 8-in. (200-mm) porcelain dish containing 250 mL of the wash liquid so that the sieve is covered to a depth of about $\frac{1}{2}$ in. Brush the pigment remaining on the sieve with a soft 1-in. (25-mm) camel's-hair brush at the rate of two strokes per second during two periods of 10 s each. Raise the sieve from the dish after each 10-s period to let the liquid on the sieve run through. Change the liquid in the dish after every two brushing periods. Continue this operation until the wash liquid passing over the residue and through the sieve is clear and free from solid particles. When the washing appears to be complete, collect about 200 mL of the wash liquid, after passing over the residue and through the sieve, in a clean 400-mL beaker. Stir the liquid vigorously, and set the beaker on a black surface in the case of white pigments and on a white surface in the case of colored pigments. The washing is not considered complete until such a test fails to show any particles collected about the middle of the bottom of the beaker.

NOTE 1—Occasionally, pigments will be found that foam when water is used as the wash liquid. In such instances, during the last washing in the