



Designation: C 184 – 94^{ε1}

Standard Test Method for Fineness of Hydraulic Cement by the 150- μm (No. 100) and 75- μm (No. 200) Sieves¹

This standard is issued under the fixed designation C 184; 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.

^{ε1} NOTE—The calculation in 6.1.1.1 was corrected editorially in February 1996.

1. Scope

1.1 This test method covers determination of the fineness of hydraulic cement by means of the 150- μm (No. 100) and 75- μm (No. 200) sieves.

1.2 *This standard does not purport to address 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.*

1.3 The values given in SI units are to be regarded as the standard.

2. Referenced Documents

2.1 *ASTM Standards:*

C 114 Test Methods for Chemical Analysis of Hydraulic Cement²

E 11 Specification for Wire-Cloth Sieves for Testing Purposes³

3. Apparatus

3.1 *Sieves*—Standard 150- μm (No. 100) or 75- μm (No. 200) sieves conforming to the requirements of Specification E 11. Wire cloth for standard sieves for cement shall be woven (not twilled) from brass, bronze, or other suitable wire, and mounted without distortion on a frame about 50 mm (2 in.) below the top of the frame. The joint between the cloth and frame shall be smoothly filled with solder to prevent lodging of the cement. The sieve frame shall be circular, 203 mm (8 in.) in diameter and provided with a pan and cover.

3.2 *Balance*—The analytical balance used in fineness determinations shall conform to the requirements of 4.2.1 of Test Methods C 114.

3.3 *Weights*—The weights used in fineness determinations shall conform to the requirements of 4.2.2 of Test Methods C 114.

3.4 *Brush*—A bristle brush will be required for use in

cleaning the 150- μm (No. 100) or 75- μm (No. 200) sieve. A 25 or 38-mm (1 or 1½-in.) brush with a 250-mm (10-in.) handle is a convenient size.

4. Sieve Correction

4.1 *150- μm (No. 100) Sieve*—Correction of the residues obtained on the No. 100 sieve is not required.

4.2 *75- μm (No. 200) Sieve:*

4.2.1 A 75- μm (No. 200) sieve may or may not need to be standardized, depending on the accuracy required. For internal laboratory use, where changes in fineness are of more importance than the absolute value, standardization may not be necessary. A correction factor should be established where accuracy is desired in order to compare results between laboratories.

4.2.2 If the intended use of the sieve is such that a correction need be established, follow the procedure described in Annex A1.

5. Procedure

5.1 Place a 50-g sample of the cement on the clean, dry 150- μm (No. 100) or 75- μm (No. 200) sieve with the pan attached. Do not use washers, shot, slugs, or coins on the sieve. While holding the sieve and uncovered pan in both hands, sieve with a gentle wrist motion until most of the fine material has passed through and the residue looks fairly clean. This operation usually requires only 3 or 4 min. When the residue appears clean place the cover on the sieve and remove the pan. Then, with the sieve and cover held firmly in one hand, gently tap the side of the sieve with the handle of the brush used for cleaning the sieve. Dust adhering to the sieve will thus be dislodged and the underside of the sieve may then be swept clean. Empty the pan and thoroughly wipe it out with a cloth or waste, replace the sieve in the pan, and carefully remove the cover. Return any coarser material that has been caught in the cover during the tapping to the sieve.

5.2 Continue the sieving without the cover as described in 5.1 for 5 or 10 min, depending on the condition of the cement. The gentle wrist motion involves no danger of spilling the residue, which shall be kept well spread out on the sieve. Continuously rotate the sieve throughout the sieving. This open sieving may usually be continued safely for 9 min or more, but

¹ This test method is under the jurisdiction of ASTM Committee C-1 on Cement and is the direct responsibility of Subcommittee C01.25 on Fineness.

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² *Annual Book of ASTM Standards*, Vol 04.01.

³ *Annual Book of ASTM Standards*, Vol 14.02.