U. S. Department of Commerce
John T. Connor, Secretary
National Bureau of Standards
A. V. Astin, Director

Certificate of Surface Area Analysis

Standard Reference Material 114k

Portland Cement

Residue on No. 325 sieve, wet method	7.1 percent
Surface area (Wagner turbidimeter)	1780 cm^2/g
Surface area (air-permeability)	3030 cm^2/g
Mean particle diameter (air-permeability)	6.29 microns

These values are for use in calibrating the Wagner turbidimeter and Blaine fineness meter in accordance with the methods of the current issue of Federal Test Method Standard 158, or ASTM methods of test for fineness of cement. The air-permeability tests should be made at a porosity of 0.500.

The surface areas and mean particle diameter reported on this standard sample are calculated on the assumption that its specific gravity is 3.15, and, therefore, the value 3.15 should be used in all calibration computations.

To open the vial, make a deep scratch with a file about ¼ in. from the bottom of the vial. Invert the vial and press a red hot file point against the scratch to cause a circumferential crack around the vial. Remove the end of the vial carefully and remove any glass fragments which may have fallen into the sample.

Often, some of a sample will be observed adhering to the inside glass surface of a sealed vial, giving the appearance of moisture in the sample. Tests on such samples have invariably shown a normal loss on ignition, and a normal surface area, indicating that the samples are suitable for their intended use. Sticking of the powder to the walls is believed due to electrostatic forces.

The specific surface of cement changes on being exposed to the air. Therefore, after opening the container, the sample must be protected from atmospheric moisture until the time of test. The sample should be used as soon as possible after opening—in any case within 8 hrs.

For use with the Blaine air-permeability apparatus, the sample should be fluffed in a 4- to 6-ounce bottle as described in the current issue of Federal Test Method Standard 158 or ASTM Method C 204, before being used.

This standard was prepared and calibrated in the Building Research Division by members of the Inorganic Building Materials Section, B. E. Foster, Chief.

WASHINGTON, D. C. 20234
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W. WAYNE MEINKE, Chief,
Office of Standard Reference Materials

(This certificate supersedes certificate of 1-4-62 Editorial revision only)