

5.16.04 PERCENT RETAINED ON THE 75 µm (NO. 200) BY DRY SCREENING  
(Kansas Test Method KT-4)

**a. SCOPE**

This method of test covers the procedure for determining the amount of material passing the 75 µm (No. 200) sieve by dry screening only.

Note: When the percent retained on the 75 µm (No. 200) sieve by dry screening is part of the project specifications, it is common practice to conduct **KT-4** followed by **KT-2** on the same sample.

**b. REFERENCED DOCUMENTS**

**b.1.** KT-2; Sieve Analysis of Aggregates

**b.2.** AASHTO M 92; Wire-Cloth Sieves for Testing Purposes

**b.3.** AASHTO M 231; Balances Used in the Testing of Materials

**c. APPARATUS**

**c.1.** The balance shall conform to the requirements of AASHTO M 231 for the class of general purpose balance required for the principal sample mass of the sample being tested.

**c.2.** Sieves meeting AASHTO M 92 of specified sizes for the aggregate being tested.

**c.3.** Oven capable of maintaining a uniform temperature of  $110 \pm 5^{\circ}\text{C}$  ( $230 \pm 9^{\circ}\text{F}$ ).

**c.4.** Drying pans.

**d. TEST SAMPLES**

Obtain samples of plant-mixed aggregate from the dried, pugmill mixed material and road mixed material from the combined windrow. The original sample before splitting shall weigh approximately 35 kg (75 lb).

Reduce sample by quartering or splitting before further drying to a mass of not less than the amount shown in Table **5.16.04-1**. Exercise extreme care to prevent segregation and/or degradation during the splitting operation.

**e. DRYING OF SAMPLES**

Road Mixed Projects: After reducing the sample to the size indicated, dry it to constant mass at  $110 \pm 5^{\circ}\text{C}$  ( $230 + 9^{\circ}\text{F}$ ). Measure the temperature by means of an armored asphalt thermometer placed with the bulb end in the material but not in contact with the pan bottom. Do not manipulate or stir the material during the

drying phase. Upon reaching a constant mass condition allow the sample to cool to room temperature before proceeding with the test.

TABLE 5.16.04-1.  
Sample Size for Determination of Percent of  
Material Passing 75 µm (No. 200) Sieve by Dry Screening

*Sieve Size	Minimum Mass of Samples (g)
37.5 mm (1 1/2 in) or more.....	15,000
25.0 mm (1 in).....	10,000
19.0 mm (3/4 in).....	5,000
12.5 mm (1/2 in).....	2,500
9.5 mm (3/8 in) or less.....	1,000

\* To select the sample size, use the largest sieve on which 5 percent or more of material is specified to be retained.

**f. TEST PROCEDURE**

The sample prepared as above shall be accurately weighed and sieved through the sieve series in the applicable specification. Conduct the sieving operation by means of a lateral and vertical motion accompanied by a jarring action to keep the sample moving continuously over the surface of the sieve. (In no case shall fragments in the sample be turned or manipulated through the sieve by hand nor shall a coin or other foreign object be placed in the sieve along with the sample to aid in sieving operation.) Continue sieving until no more than 1 percent by mass of the residue passes any sieve (except the 150 and 75 µm (No. 100 and No. 200)) during one minute. Continue the sieving operation for the 150 µm and 75 µm (No. 100 and No. 200) sieves until not more than 1 percent by mass of the residue passes each individual screen during a two minute period. When mechanical sieving is used, the thoroughness of sieving shall be tested by using the hand method of sieving as described above. Before using a mechanical shaker, in addition to hand shaking, for production control, comparison test should be run to check the results against hand shaking only. The time on the mechanical shaker should be adjusted so that the same results are obtained as by the hand method.

In no case shall the fraction retained on any sieve at the completion of the sieving operation weigh more than 6 kg/m<sup>2</sup> (4 g/in<sup>2</sup>) of sieving surface. (This amounts to 200 grams on the 200 mm (8 in) diameter sieve.) This may be accomplished by removing excess material from the screen, placing it in a suitable container, sieving the material remaining on the screen, then sieving the material retained in the container.

**g. CALCULATIONS**

The percent retained on the 75 µm (No. 200) by dry screening is calculated as follows:

$$\frac{100(A)}{B}$$

Where: A = Mass of the retained fraction of the original sample as determined by dry screening only, over a 75 µm (No. 200) sieve.

B = Original dry mass of sample.