

CITY OF COLUMBUS, OHIO

**SUPPLEMENT 1039
METHOD OF TEST FOR
MECHANICAL ANALYSIS OF EXTRACTED AGGREGATE**

October 31, 2011

1039.01 SCOPE This method of test covers a procedure for the determination of the particle size distribution of fine and coarse aggregates extracted from asphalt concrete mixtures, using sieves with square openings.

1039.02 APPARATUS The apparatus consists of the following:

1. Balance: A balance conforming to AASHTO M 231, Class D for samples less than 5000 g, Class E for samples 5000 g or more.
2. Sieves: Sieves with square openings mounted on substantial frames constructed in a manner that will prevent loss of material during sieving. Suitable sieve sizes selected to furnish the information required by the specifications covering the material to be tested. The woven wire cloth sieve conforming to the requirements of AASHTO M 92 for Sieves for Testing Purposes.

1039.03 PROCEDURE

1. Dry the sample until further drying at 230 + 9 °F(110 + 5 °C) does not alter the weight 0.1 percent. The total weight of aggregate in the asphalt concrete mixture being tested is the sum of the weights of the dried aggregates and the mineral matter contained in the extracted asphalt binder. The latter is to be taken as the weight of ash in the extract.
2. Sieve the aggregate over sieves of the various sizes required by the specification covering the mixture, including the 75 µm sieve. Sieve in accordance with AASHTO T 27 Standard Method of Test for Sieve Analysis of Fine and Coarse Aggregates. Commencing with the largest sieve, record an accumulated weight (consisting of the weight of material retained on a particular sieve plus the weight of material on all previous sieves) of material retained on each successive sieve and the pan. The total accumulated weight must check the total weight of the sample within 0.2 percent. Add the weight of dry material passing the 75 µm sieve by dry sieving to the weight of mineral matter in the extracted asphalt binder in order to obtain the total passing the 75 µm sieve. Determine the percent of material passing each sieve using the following formula:

$$\% \text{ Passing} = 100 \left(1 - \frac{P_a}{P_t} \right)$$

where:

P_a = the accumulated weight for a particular sieve

P_t = the total weight of aggregate in the asphalt concrete mixture from 3.1.

1039.04 REPORT Report percentages to the nearest whole number except for the percentage passing the 75 μm sieve which is reported to the nearest 0.1 percent.