

November 6, 2001

ODOT

MATERIALS DIVISION

Standard Practice for Scalp and Replacement  
of Oversized Particles for  
AASHTO T 99 Methods C and D

T 99 Method C Requirements:

Use when less than 5% material is retained on the 3/4-in. (19 mm) sieve.

T 99 Method D Requirements:

Use when 5 to 30% of weight of material is retained on the 3/4-in. (19 mm) sieve.

Standard Proctor tests are run using individual points/specimens.

Equipment includes: rubber-coated pestle and mortar; 2", 3/4", 1/2", 3/8", and U.S. No. 4 sieves.

Procedure:

1. Air dry or oven dry material at 60°C (140°F) if the material is not workable.
2. Process sample over the U.S. No. 4 (4.75 mm) sieve by breaking up the coarse particles with a rubber-coated pestle and mortar in such a manner as to avoid reducing the natural size of individual particles. Separate sample into two (2) portions: Portion 1—Material retained on the U.S. No. 4 sieve; Portion 2—material passing the U.S. No. 4 sieve.
3. Weigh the material that passes the U.S. No. 4 sieve and record its weight. Weigh the material that is retained on the U.S. No. 4 sieve. Add weights together for the total weight.
4. Sieve the material retained on the U.S. No. 4 over the 2", 3/4", 1/2", 3/8", and U.S. No. 4 sieves. Save material retained on each sieve separately. Weigh and record each individual weight.
5. Divide each of the individual weights and the material that passes the U.S. No. 4 by the total weight and multiply by 100. This gives the percentage retained on each sieve. Add the percentage retained on the 2" and 3/4" together and determine whether to run method C or D. If all material is retained on the 2" sieve, subtract it from the total sample weight and recalculate the percentages.
6. If T99 Method C is selected, individual specimen weights should be 2200 g. If T99 Method D is selected, individual specimen weights should be 5500 g.
7. Multiply each percent retained by the specified specimen weights (2200 or 5500 g) to obtain the individual portions of the test specimens.
8. Material retained on the 3/4" sieve is too large for the 4- and 6-in. molds. Replace the plus 3/4" material with an equal amount of material passing the 3/4" sieve and retained on the U.S. No. 4 sieve.

- . To determine the amount of sample required for replacing the oversized material from each sieve, add the weights of the 1/2", 3/8" and U.S. No. 4 material together and divide the weight retained on the 3/4" by the total weight of the plus 1/2", 3/8" and U.S. No. 4. This is the proportion factor.
- ). Multiply the individual weights of the plus 1/2", 3/8" and U.S. No. 4 by the proportion factor and add the proportioned weights together. (NOTE: The sum should equal the weight retained on the 3/4" sieve.)
1. Add the sum of weights from item 10 to the weight of the material passing the U.S. No. 4 sieve. This will be the total specimen weight for each test specimen (i.e., compaction point).