

## 2019 Fine Aggregate Samples 203(A) and 204(B) Instructions for Testing and Reporting

**Closing Date: March 28<sup>th</sup>, 2019**

All tests should be conducted on each of the two samples according to the AASHTO or ASTM Standard Test Methods indicated. To permit an estimate of single-operator precision, each individual test should be performed on both samples by the same person, but it is not necessary that all tests be performed by the same person. Please use the same set of sieves for both samples. Report the results of a single determination only, not the average of two or more, except in cases where an average is called for in the method. For any tests you do not choose to perform, leave the appropriate spaces on the data sheet blank.

AASHTO Accredited laboratories are required to perform every test included in an AASHTO re:source Proficiency Sample Program that is also listed under each laboratory's AASHTO Accreditation. The tests that are not listed under the laboratory's accreditation may also be performed, but testing is not required, and the AASHTO Accreditation Program will not evaluate the ratings.

Treat each sample as you would treat a typical "testing" sample. Any special handling or preparation needs will be included below.

***Note: The outside of the shipping boxes are labeled 203(A) and 204(B). The samples inside the boxes are labeled only (A) or (B). The sample labeled (A) is sample 203. The sample labeled (B) is sample 204.***

***Also Note: Please note that samples 203(A) and 204(B) are not identical. The program is designed to obtain two independent test results, one for each numbered sample, for each test method that the laboratory chooses to perform. Also, the gradation samples for sieve testing are provided in small plastic bags (each weighing approximately 480 to 520 g). Please remember to oven dry both gradation samples before testing.***

**PLEASE USE THE SAMPLES IN THE SMALL PLASTIC BAGS (approx. 480 to 520 g) FOR T11/C117, T27/C136 AND D7428.**

### **Materials Finer Than 75- $\mu$ m Sieve by Washing (Procedure B using a wetting agent), AASHTO T11-05 or ASTM C117-17:**

Remove as much material from the small bag as possible (light rinsing of the bag may be necessary). Oven dry the gradation sample, weigh it, place it in the container, add water and wetting agent, and wash it over the 75- $\mu$ m (No. 200) sieve (as directed by T11/C117, Procedure B). Determine the amount of material finer than the 75- $\mu$ m sieve by washing. Report the percentage finer than the 75- $\mu$ m (No. 200) sieve to the nearest 0.01 percent.

### **Sieve Analysis, AASHTO T27-14 or ASTM C136-14:**

Oven dry the remaining gradation material again (after the wash) and sieve it (as directed by T27/C136). Report to the nearest 0.1 percent the total material **passing** each of the following sieves: 4.75-mm, 2.36-mm, 1.18-mm, 600- $\mu$ m, 300- $\mu$ m, 150- $\mu$ m, and the 75- $\mu$ m. Report the percentage passing the 75- $\mu$ m sieve to the nearest 0.01 percent. Calculate the percent of each fraction based on the total original oven dry mass before the gradation sample was washed. *(The intent is to follow the test methods exactly as written.)* **Use the same set of sieves for both samples. RETAIN THIS MATERIAL FOR USE WITH D7428.**

**Resistance of Fine Aggregate to Degradation by Abrasion in the Micro-Deval Apparatus, ASTM D7428-15:**

Using the material retained from the sieve analysis portion of the testing, prepare  $500 \pm 5$  g of the test sample in accordance with the following table (Section 8.2 of D7428-15):

Sieve Size		Sample Mass (g)
Passing	Retained	
4.75-mm (No. 4)	2.36-mm (No. 8)	50 g
2.36-mm (No. 8)	1.18-mm (No. 16)	125 g
1.18-mm (No. 16)	0.600- $\mu$ m (No. 30)	125 g
0.600- $\mu$ m (No. 30)	0.300- $\mu$ m (No. 50)	100 g
0.300- $\mu$ m (No. 50)	150- $\mu$ m (No. 100)	75 g
150- $\mu$ m (No. 100)	75- $\mu$ m (No. 200)	25 g
<b>Approximate Sample Mass:</b>		<b>500 g</b>

If enough sample is not available from the gradation of the material in the **SMALL PLASTIC BAGS**, oven dry, wash, oven dry, and sieve a portion of material from the **LARGE SAMPLES** to acquire enough material for the specified test sample gradation. Perform the test as directed in Section 9 of D7428. Determine the percent loss of the total sample mass and report it to the nearest 0.1 percent.

**PLEASE USE THE LARGE SAMPLES (approx. 5.5 kg) FOR THE REMAINDER OF THE TESTS BELOW.**

**Specific Gravity (Relative Density) and Absorption of Fine Aggregate, AASHTO T84-13 or ASTM C128-15:**

Oven dry the sample at  $110 \pm 5^\circ\text{C}$  ( $230 \pm 9^\circ\text{F}$ ), soak in water and determine the bulk specific gravity, the bulk specific gravity (SSD) and the apparent specific gravity [or relative density (OD), relative density (SSD), and apparent relative density for C128] in accordance with the test method. Report these to the nearest 0.001 units. Determine the absorption and report it to the nearest 0.01 percent.

**Plastic Fines in Graded Aggregates and Soils by Use of the Sand Equivalent Test, AASHTO T176-17 or ASTM D2419-14:**

Report the average of the three sand equivalent determinations. ***Special Instructions: After test specimens are obtained (Specimens may be obtained using either the Air Dry or Pre-Wet method according to AASHTO Alternate Method No.1 or No.2, or ASTM Procedure A or B), dry each test specimen to constant mass at  $110 \pm 5^\circ\text{C}$  ( $230 \pm 9^\circ\text{F}$ ) and cool to room temperature before testing. (Moist test specimens produce lower sand equivalent values than corresponding oven dry specimens. We are asking laboratories to oven dry the prepared test specimens before pouring them into the plastic cylinder in order to obtain more consistent results for between laboratory comparisons.)***

**Sulfate Soundness by Use of Sodium Sulfate or Magnesium Sulfate, AASHTO T104-99 or ASTM C88-18:**

The test may be performed using sodium or magnesium sulfate, or both solutions if desired. Perform five cycles on the following sizes: passing the 2.36-mm and retained on the 1.18-mm sieve; passing the 1.18-mm and retained on the 600- $\mu$ m sieve; passing the 600- $\mu$ m and retained on the 300- $\mu$ m sieve. For each size fraction, report the amount of material finer than the designated sieve as a percentage of the original mass of the fraction to the nearest 0.01 percent. **Do NOT compute the weighted, or weighted average, loss.**

**Uncompacted Void Content, AASHTO T304-17 or ASTM C1252-17:**

Perform Method A on both samples and complete two test runs on each sample. Calculate the uncompacted voids for each test run and record each result to the nearest 0.01 percent. *{Use the oven-dry bulk specific gravity [or relative density (OD)] determined above for the calculations.}* Calculate the average uncompacted voids of the two test runs and report the average to the nearest 0.01 percent.

Contact AASHTO re:source at [psp@ashtoresource.org](mailto:psp@ashtoresource.org) or call 240-436-4900 if there are questions.