

2022 Aggregate Gradation and Gravity Samples 1(A) and 2(B) Instructions for Testing and Reporting

Closing Date: September 1st, 2022

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.

The outside of the shipping boxes are labeled 1(A) and 2(B). The samples inside the boxes are labeled only (A) or (B). The sample labeled (A) is sample 1. The sample labeled (B) is sample 2.

Each sample box should contain the following:

- ***One bag of a mixture of coarse and fine aggregates (approximately 2.8 kg)***
- ***One bag of -4.75-mm (No. 4) fine aggregate in moist condition (approximately 2.5 kg)***

Please note that samples 1(A) and 2(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 mixed-gradation samples for sieve testing are provided in plastic bags (each weighing approximately 2800g dried). Please remember to oven dry both gradation samples before testing.

PLEASE USE THE MIXTURE OF COARSE AND FINE AGGREGATES SAMPLES IN THE PLASTIC BAGS (Dry Mass is approx. 2800 g) FOR T11/C117, T27/C136 and T85/C127.

Materials Finer Than 75- μ m Sieve by Washing (Procedure B using a wetting agent), AASHTO T11-20 or ASTM C117-17:

Remove as much material from the bag as possible (light rinsing of the bag may be necessary). Oven dry the gradation sample, weigh it, place it in the container. ***If the dry mass of your sample is not between 2775g and 2825g, please contact us.*** Then add water and wetting agent and wash it over the 75- μ m (No. 200) sieve (as directed by T11/C117, Procedure B). Determine the amount of material finer than the 75- μ m sieve by washing. Report the percentage finer than the 75- μ m (No. 200) sieve to the nearest 0.01 percent.

Sieve Analysis, AASHTO T27-20 or ASTM C136-19:

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: 25.0-mm, 19.0-mm, 12.5-mm, 9.5-mm, 4.75-mm, 2.36-mm, 1.18-mm, 600- μ m, 300- μ m, 150- μ m, and the 75- μ m. Report the percentage passing the 75- μ 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 THE PLUS 4.75-mm (No. 4) for T85/C127.***

Specific Gravity and Absorption of Coarse Aggregate, AASHTO T85-21 or Density, Relative Density (Specific Gravity) and Absorption of Coarse Aggregate, ASTM C127-15: Oven-dry the samples at $110 \pm 5^{\circ}\text{C}$ ($230 \pm 9^{\circ}\text{F}$) and determine the bulk, the bulk (SSD) and the apparent specific gravities. [ASTM C127 refers to these results as Relative Density (OD), Relative Density (SSD), and Apparent Relative Density, respectively.] Report these to the nearest 0.001 units. Determine the absorption and report it to the nearest 0.01 percent.

PLEASE USE THE FINE AGGREGATE SAMPLES in MOIST CONDITION (approx. 2.5 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. **RETAIN THIS MATERIAL TO USE FOR T304/C1572 TESTING.**

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 to obtain more consistent results for between laboratory comparisons.)*** **RETAIN UNUSED MATERIAL TO USE FOR T304/C1572 TESTING.**

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

With any retained material from T84/C128 or unused material from T176/D2419, 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 or call 240-436-4900 if there are questions.