2026 Soil Classification and Compaction Proficiency Samples 193(A) and 194(B) Sample Instructions

Closing Date: April 30, 2026

General Information:

Treat each sample as you would treat a typical sample brought into the laboratory. Any special handling or preparation instructions are included below. Conduct tests on each of the two samples in accordance with the instructions below. Report the results of a single determination only, not the average of two or more unless specified in the test method or instructions.

Reporting the results to an extra decimal place beyond what is required by the test method is requested for statistical reasons and equates to more precise data that is available to analyze.

To permit an estimate of single-operator precision, the same operator should conduct an individual test on both samples. It is not necessary that the same person conduct all the tests in the sample round.

Leave the appropriate spaces on the data sheet blank for any tests you choose not to perform.

Information for AASHTO Accredited Laboratories:

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 Scope.

AASHTO Accreditation Policy on PSP Participation

Tests not included under the laboratory's accreditation may also be performed, but testing is not required, and the AASHTO Accreditation Program will not evaluate the ratings.

Sample Information:

You should receive two boxes of material for Soil Classification and Compaction samples 193(A) and 194(B).

Each sample box should contain one bag of soil (approximately 5.5 kg).

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Sample Preparation:

Prepare the soil using the dry preparation method as found in AASHTO R58 or the oven or air-dried preparation methods found in the applicable ASTM standards.

Tests Methods for Particle Size Analysis, Soil Constants, Specific Gravity, and Organic Content:

Particle Size Analysis of Soils T88-22 or D422-63(2007)e2: Determine the hygroscopic moisture and perform the sieve and hydrometer analysis. Report the sieve and hydrometer analysis as the percentage passing. Use the same nest of sieves for both samples and report the results to the nearest 0.1 percent.

Particle Size Distribution (Gradation) of Fine-Grained Soils Using the Sedimentation (Hydrometer) Analysis D7928-21e1: Determine the hydrometer reading for each specified time interval within ± 10 seconds for the 4-minute reading and within 1 ± minute for the 30, 60, 240, and 1440-minute readings. When calculating the particle diameter in suspension at each time interval, use a specific gravity value of 2.65 (reference value for this test only). When reporting particle diameter, report the diameter (D) to the nearest 0.001 mm for the 4-minute reading and to the nearest 0.0001 mm for the 30, 60, 240, and 1440-minute readings. Report the total percent finer (N_m) at the specified time intervals to the nearest 0.1%.

Liquid Limit of Soils T89-22 or D4318-17e1: Determine the liquid limit by Method A (multipoint method). Report the results to the nearest 0.1 percent.

Plastic Limit of Soils T90-22 or D4318-17e1: Determine the plastic limit and report the results to the nearest 0.1 percent. Do not report the plasticity index**.** If the material is determined to be non-plastic, leave the space blank on the data sheet.

Shrinkage Factors of Soils by the Wax Method D4943-25: Determine the shrinkage limit and report the results to the nearest 0.1 percent.

Specific Gravity of Soils T100-25 or D854-23: Determine the specific gravity of material passing the 2.00-mm (No. 10) sieve. Oven-dry the soil in accordance with Section 10 of T100 or Section 11, Method B of D854 and determine the specific gravity based on water at 20°C. Report the results to the nearest 0.001.

Determination of Organic Content by Loss on Ignition T267-22 or D2974-25e1: Determine the percentage of organic material in the specimens in accordance with the test procedure. Perform the test in accordance with Method A if using D2974. Report the percentage of organic material to the nearest 0.1%.

Test Methods for Compaction:

Testing for Moisture-Density Relations of Soils may be performed using either the Standard Effort (T99/D698) or the Modified Effort (T180/D1557). It is not necessary to perform both types of testing. A 4-in. mold (Method A) must be used.

Sufficient material is not provided to prepare a separate sample at each trial moisture content in accordance with D698 or D1557. After each compaction, obtain a moisture content specimen and thoroughly break up the remainder of the compacted soil into particles small enough to pass a 4.75-mm (No. 4) sieve, as judged by eye. Add the next water increment, thoroughly mixing the water into the soil prior to compaction. Repeat this process for each compaction.

Moisture-Density of Soils (Standard Effort) Using a 2.5-kg (5.5-lb) Rammer T99-25, D698-12: Determine the moisture-density relations using a 101.6-mm (4-in.) diameter mold (Method A). Report the optimum moisture content to the nearest 0.1 percent. Report the maximum dry density to the nearest 0.1 lb/ft^3.

Moisture-Density of Soils (Modified Effort) Using a 4.54-kg (10-lb) Rammer T180-25, D1557-12(2021): Determine the moisture-density relations using a 101.6-mm (4-in.) diameter mold (Method A). Report the optimum moisture content to the nearest 0.1 percent. Report the maximum dry density to the nearest 0.1 lb/ft^3.

Contact AASHTO re:source at psp@aashtoresource.org or call 240-436-4900 if there are questions.