2018 Soil Classification and Compaction Proficiency
Samples 177 and 178
Instructions for Testing and Reporting

Closing Date: April 19th, 2018

All tests should be conducted on each of the two samples according to the AASHTO or ASTM methods indicated. Report the results of a single determination only, not the average of two or more. For any tests you do not choose to perform, leave the appropriate spaces on the data sheet blank.

Note: The outside of the shipping boxes are labeled 177 (A) and 178 (B). The samples inside the boxes are labeled only (A) or (B). The sample labeled (A) is sample 177. The sample labeled (B) is sample 178.

Also Note: Please note that samples 177 (A) and 178 (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.

Treat each sample as you would treat a typical “production-type” sample. Any special handling or preparation needs will be included below.

Preparation of Samples: Prepare the soil in accordance with Practice R58-11 / D421-85 or Method R74-16.

Particle Size Analysis of Soils T88-13 or D422-63(2007)e2: Determine the hygroscopic moisture and perform the sieve and hydrometer analysis. Report the sieve and hydrometer analysis as a percent passing. *Use the same nest of sieves for both samples* and report the results to the nearest 0.1 percent.

Liquid Limit of Soils T89-13 or D4318-17: Determine the liquid limit by Method A (multipoint method). Report the results to the nearest 0.1 percent.

Plastic Limit of Soils T90-16 or D4318-17: 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 D4943-08: Determine the shrinkage limit and report the results to the nearest 0.1 percent.

Specific Gravity of Soils T100-15 or D854-14: Determine the specific gravity of material passing the 2.00-mm (No. 10) sieve [or passing the 0.425-mm (No. 40) sieve, if T146 was used]. Oven dry the soil in accordance with Section 8.3 (T100) or Section 9.3 (D854) and determine the specific gravity based on water at 20°C. Report the results to the nearest 0.001 specific gravity unit.
Moisture-Density of Soils (Standard Effort) Using a 2.5-kg (5.5-lb) Rammer T99-17, D698-12e2: Determine the moisture-density relations using a 101.6-mm (4-in.) diameter mold (AASHTO Method A or ASTM Method A). Report the optimum moisture content to the nearest 0.1 percent. Report the maximum dry density to the nearest 0.1 lb/ft³. (Note: If performing D698, the material must be reused. There is not sufficient soil to prepare a separate sample at each trial moisture content. After each compaction, take 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 and proceed by adding the next water increment. Mix each water increment thoroughly with the soil sample prior to compaction.)

Moisture-Density of Soils (Modified Effort) Using a 4.54-kg (10-lb) Rammer T180-17, D1557-12e1: Determine the moisture-density relations using a 101.6-mm (4-in.) diameter mold (AASHTO Method A or ASTM Method A). Report the optimum moisture content to the nearest 0.1 percent. Report the maximum dry density to the nearest 0.1 lb/ft³. (Note: If performing D1557, the material must be reused. There is not sufficient soil to prepare a separate sample at each trial moisture content. After each compaction, take 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 and proceed by adding the next water increment. Mix each water increment thoroughly with the soil sample prior to compaction.)

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