Soil-Cement Mixtures Samples 1(A) and 2(B)
Sample Instructions

Closing Date: May 14, 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.

Requirements for AASHTO Accredited Laboratories:

AASHTO accredited laboratories are required to perform every test included in an AASHTO re:source Proficiency Sample Program sample round that is also listed in each laboratory's AASHTO Accreditation scope.

AASHTO Accreditation Policy on PSP Participation

The tests that are not listed in the laboratory's accreditation scope may also be performed, but testing is not required, and the AASHTO Accreditation Program (AAP) will not evaluate the ratings.

Sample Information:

You should receive two boxes of materials for Soil-Cement Mixtures Samples 1(A) and 2(B). Each box should contain two bags of material:

Bag 1 – an 8.0-kg bag of blended soil 100% passing the 4.75-mm (No. 4) sieve

Bag 2 – a 500-g bag of Portland cement

Sample Preparation:

Prepare the following three specimens from each sample: (1) one for soil-cement loss (T135/D559), (2) one for soil-cement loss (T136/D560), and (3) one for compressive strength (D1633). A total of six specimens will be tested, three from Sample 1(A) and three from Sample 2(B).

The target cement content for both Samples 1(A) and 2(B) is approximately 4%. Determine the moisture content of the material as received by oven-drying the soil (Bag 1) at 60°C (140°F) in accordance with T265/D2216. Upon determination of the moisture content, oven-dry the material from Bag 1 at 60°C (140°F). Split the soil into three specimens, each weighing 2,400 g. Add 100 g of Portland cement (Bag 2) to each specimen, so the total mass of each specimen is 2,500 g. Dry mix the cement and the soil thoroughly (to a uniform color). Add enough water to achieve the target moisture content listed below for each specimen:

- Compact three specimens for Sample 1(A) at a total water content of 8.25 percent.
- Compact three specimens for Sample 2(B) at a total water content of 8.50 percent.

Test Methods:

Laboratory Determination of Water (Moisture) Content of Soils AASHTO T265-22/ASTM D2216-19):
Determine the water content of the material as received for each sample. Determine the average water content of the three specimens immediately before compaction, and the average water content of the unused remaining material from the three specimens immediately after compaction. Report the results to the nearest 0.1%.

Wetting and Drying Compacted Soil-Cement Mixtures AASHTO T135-22/ASTM D559-15(2023)e1:
Prepare, compact, and determine the soil-cement loss of the specimens in accordance with Method A. Report the dry density of the specimens to the nearest 0.1 lb./ft^3. Cure the specimens for a period of seven (7) days. Report the soil-cement loss to the nearest 0.1%.

Freezing and Thawing Compacted Soil-Cement Mixtures AASHTO T136-22/ASTM D560-24:
Prepare, compact, and determine the soil-cement loss of the specimens in accordance with Method A. Report the dry density of the specimens to the nearest 0.1 lb./ft^3. Cure the specimens for a period of seven (7) days. Report the soil-cement loss to the nearest 0.1%.

Compressive Strength of Molded Soil-Cement Cylinders ASTM D1633-17:
Prepare the specimens in accordance with Method A using a 101.6-mm (4-in) mold. After extruding the specimens, cure the specimens for a period of seven (7) days. Do not immerse the specimens in water for 4 hours and do not cap the specimens. Report the maximum dry density immediately after compaction (nearest 0.1 lb./ft^3), the mass of the specimen immediately before compression (nearest 0.1 lb.), the maximum load carried by the specimen (nearest 1 lb.), and the compressive strength (psi).

Additionally, for informational purposes only, determine the water content of the compressive strength specimens after compression in accordance with T265/D2216. Report the results to the nearest 0.1%.