

Please read the following instructions carefully **BEFORE** you start testing!

- Please report the results online using the 2021 Soil forms in your lab portal by **Friday January 8, 2021**. Results reported after the deadline may not be included in the analysis, potentially causing a delay in your laboratory's certification.
- **PLEASE DO NOT** enter fictitious results for a test that your lab has decided not to report. If the test will not be reported, please check off the box "Cancel test?" for the applicable test in the online Type D or Soil reporting form.
- **PLEASE DO NOT CANCEL** a test using the "Cancel test?" feature in a Type D or Soils reporting form unless you do not want your lab to be certified for that test.

## **INSTRUCTIONS**

### **2021 CCIL Soil Proficiency Samples**

Each participant should receive the following samples:

- If you selected soils tests on your lab's application for certification, you should receive 1 pair (2 small bags) of soil samples labelled **1.20S** and **2.20S**. These samples are in a dry state and therefore no drying should be necessary. Should you find it necessary, dry them to a constant mass at no more than 60°C.
- Soil samples were not provided if only ASTM D698 or ASTM D698 and D1557 were selected on your lab's 2020 application. These tests are performed on aggregate samples and instructions are included in the aggregate program instructions.

All testing must be carried out in pairs by the same Operator, e.g., the Operator who performs AASHTO T88 analysis on Sample **1.20S** must also perform AASHTO T88 analysis on Sample **2.20S**. However, the same Operator need not perform every test in which the laboratory intends to participate. For example, Operator A may perform AASHTO T88 analysis and Operator B the ASTM D854 analysis.

**NOTE: In order to maintain certification, you are required to submit results on the tests all Type C tests and those Type D tests for which you are certified plus/minus any Type D tests you added/deleted on your 2020 or 2021 laboratory application.**

Each lab is advised to perform the tests in such an order to ensure sufficient material.

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**1. Particle Size Analysis of Soils, AASHTO T88:**

Prepare individual test samples from samples labelled **1.20S** and **2.20S**. Use a freshly prepared dispersing agent with distilled water and **40 grams** of sodium hexametaphosphate per litre of solution and ensure the pH value of the solution is adjusted in the range of 8 to 9. The soil samples supplied should be dispersed in the stirring apparatus for 10 minutes.

Compute the specific gravity correction factor  $\alpha$  and constant K assuming a value of **2.750** for the **specific gravity of soil particles** (DO NOT use values determined by your lab).

Report the Percent passing the 425  $\mu\text{m}$ , 75  $\mu\text{m}$ , 20  $\mu\text{m}$ , 5  $\mu\text{m}$  and 2  $\mu\text{m}$  sieves to the nearest 0.1 percent.

**2. Liquid Limit, Plastic Limit and Plasticity Index of Soils, ASTM D4318:**

Please determine the Liquid Limit, Plastic Limit and Plasticity Index of soil samples **1.20S** and **2.20S** in accordance with the procedures as outlined in **ASTM D4318**. Prepare the test specimens as outlined in Section 11.2 – Dry Preparation.

Determine the Liquid Limit according to the procedure described in Section 12.0, Method A – Multi-point Liquid Limit. Determine the Plastic Limit using a minimum of two trials and report the mean value. Report the **Liquid Limit, Plastic Limit and Plasticity Index** to the nearest one decimal, i.e., 0.1 percent.

**3. Specific Gravity of Soils, ASTM D854:**

Determine the specific gravity of soil samples **1.20S** and **2.20S** according to ASTM D854. Carry out the test according to the procedures as outlined in Section 9.3 – Procedures for Oven Dried Specimen.

Perform the test on minimum of three specimens and report the Mean Specific Gravity of the soil to the nearest three decimal places (0.001). The calculated test results from three specimens (range) should be within 0.02 of each other. If the range exceeds 0.02, the test must be repeated.

**4. Compaction Characteristics of Soil, Method ASTM D698:**

This test is performed on an aggregate sample. Instructions for this test are given in the aggregate instructions. The result is entered on the 2021 Soil reporting form on your portal.