

2024 ALBERTA AND YUKON MINI-CORRELATIONS

AGGREGATES and SOILS INCLUDING SUPERPAVE AGGREGATES

Please read the following Mini-Correlation instructions carefully BEFORE you start testing!

- Testing of mini correlation samples shall be according to the below instructions.
- Submission of results by **March 27, 2024** in the mini correlation report(s) provided in the labs portal. <https://portal.ccil.com/> After signing into the portal, all mini-correlation reporting forms appropriate to your lab certification will be accessible under the tab for **Reporting Forms**. You will be able to enter your test results into the forms and submit to CCIL through the portal.
- Please record the mini-correlation sample identification information found on the sample labels in the “Comments” section of the reporting forms and upload any photos of unclear labels in the portal mini report.

SAMPLES FOR MINI-CORRELATION TESTING

- Samples for the mini-correlation were shipped to the laboratory March 12th. If you experience delay in receiving your samples, please advise Anett Briggs abriggs@ccil.com of your need for an extension. **Results beyond March 31st may affect your 2024 certificate being issued.**
- The mini-correlation samples are pre-prepared to meet the requirements of the appropriate test method and are to be tested as received unless instructed otherwise.
- Generally, only one sample will be shipped for each test requiring a mini-correlation. Tests for a mini-correlation are not generally carried out in pairs.
- Unsatisfactory mini result will result in a 2nd mini that must be conducted in the presence of a CCIL inspector, typically at the laboratory’s expense.

ALBERTA AND YUKON MINI-CORRELATION INSTRUCTIONS – AGGREGATES

Sample Preparation

Dry all mini-correlation aggregate samples to a constant mass at $110 \pm 5^\circ\text{C}$.

ASTM C136: SIEVE ANALYSIS OF AGGREGATES

If the problem with your original test results was with the fine aggregate sieves only, your lab will receive a mini-correlation sample of fine aggregate only. Otherwise, your lab will receive a combined coarse aggregate and fine aggregate sample.

Combined

If you receive a **combined coarse and fine aggregate sample**, test the entire mini-correlation sample as specified in C136 to determine the aggregate gradation. Report the percent passing on each sieve listed in the portal report (20, 16, 12.5, 10, 5, 2.5, 1.25, 0.630, 0.315, 0.160 and 0.080 mm)). All sieves are to be reported to 1 decimal (0.1%), except the 5.00 mm and 0.080 mm sieves are to be reported to two decimal places (0.01%).

Fine Only

If you receive **only fine aggregate** for the mini-correlation sample, test the entire mini-correlation sample following C136 on the 2.5, 1.25, 0.630, 0.315, 0.160 and 0.080 mm sieves. Wash the sample according to C117 as cl. 7.7.1. indicates.

NOTE: Prior to reporting, carry out the following calculation: Reduce the % passing on each sieve by multiplying your results by 0.481. Failure to do so, may result in the laboratory being required to participate in a second mini correlation.

All sieves are to be reported to 1 decimal (0.1%), except the 0.080 mm sieve is to be reported to two decimal places (0.01%).

Example:

Sieve (mm)	Fine Aggregate % Passing of mini sample provided	Multiplication factor (% Passing 4.75mm)	Value to be reported in the portal report - (% Passing of full sample including coarse material)
2.36	77.7	x0.491	=38.1
1.18	58.2	x0.491	=28.6

ASTM C117: WASH PASSING THE 0.08 mm SIEVE.

Test the entire mini correlation sample as specified in C117. Report the Percent Loss to two decimal (0.01%).

ASTM D5821: PERCENTAGE OF FRACTURED PARTICLES IN COARSE AGGREGATE

The mini-correlation sample is comprised of a single test sample representing all of the size fractions combined. Test the portion of the sample retained on the 5.0 mm sieve only, according to the test method. Determine the percentage of fractured particles with at least one fractured face by mass for the whole sample. Report the Percent Fractured particles to the nearest 0.1%.

TYPE D TESTS

ASTM D6928: MICRO-DEVAL ABRASION (COARSE AGGREGATE)

Prepare the test specimen according to ASTM D6928 Clause 8.2. Record the Test Sample Loss to the nearest 0.1%.

ASTM D2419: SAND EQUIVALENT

The mini-correlation sample is comprised of a single test sample. Prepare the test specimens in accordance with Procedure A or B. Report the average sand equivalent value to the nearest 0.1%. Include whether you used Procedure A or B in the comments of the report in the portal. The portal allows 2 decimals but only one is required.

SOILS TESTS

ASTM D698: PROCTOR - MOISTURE-DENSITY RELATIONSHIP

Follow ASTM D698 Method C to perform the test on only the materials passing 19.0 mm sieve for compaction. Use the following parameters to compute correction for oversize particles:

Bulk specific gravity of the oversize fraction = 2.600
Water content of the oversize fraction = 0.90%

Calculate corrected optimum moisture content according to equation (4) of ASTM D 4718.

Calculate corrected maximum dry density using the following equation:

$$C_{pd} = (100 p_F GM) / (p_F PC + GM PF)$$

CCIL Aggregate and Soil Proficiency Sample Program
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where:

Cpd = corrected dry density of the total material (combined finer and oversize fractions),

GM = bulk specific gravity,

pF = dry density of the finer fraction,

PC = Percent of oversize coarse fraction by weight, and

PF = Percent of oversize finer fraction by weight,

Example Calculation:

Given GM = 2.60, pF = 2.250, PC = 12.2%, PF = 87.8%

$$Cpd = (100 \times 2.250 \times 2.60) / (2.250 \times 12.2 + 2.60 \times 87.8) = 2.288$$

Report the maximum wet density in t/m³, corrected maximum dry density in t/m³, and corrected optimum moisture content in percentage. DO NOT REUSE THIS MATERIAL. (Note: t/m³ = g/cm³).
