2025 BC, MB, NB, NL, NS, SK, PE, NT 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 28, 2025** 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 6, 2025. 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 2025 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.

BC, SK, MB, PE, NS, NB, NL MINI-CORRELATION INSTRUCTIONS – AGGREGATES

Sample Preparation

Dry all mini-correlation aggregate samples to a constant mass at 110 ± 5°C. (Drying at max 40°C that was needed for some of the samples tested for the 2025 certification period does not apply to any of the mini correlation samples.)

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. See special instructions for fine aggregate samples (Fine Only) below.

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 (19, 16, 12.5, 9.5, 4.75, 2.36, 1.18, 0.6, 0.3, 0.15 and 0.075 mm). All sieves are to be reported to 1 decimal (0.1%), except the 4.75 mm and 0.075 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 2.36, 1.18, 0.6, 0.3, 0.15 and 0.075 mm sieves. Wash 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 **0.468**. Failure to do so, may result in the laboratory being required to participate in a second mini correlation in the presence of a CCIL inspector, typically at the laboratory's expense.

All sieves are to be reported to 1 decimal (0.1%), except the 0.075 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	x0.468	=36.4
1.18	58.2	x0.468	=27.2

ASTM C117: WASH PASSING THE 0.075 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

Test the portion of the sample retained on the 4.75mm sieve only. Do not separate into individual size fractions. Determine the percentage of fractured particles with at least one fractured face by mass. Report the Percent Fractured particles to the nearest 0.1%.

ASTM D4791: PERCENT FLAT AND ELONGATED PARTICLES, Type C and Type D

The mini-correlation sample is comprised of a single test sample each, representing all the size fractions combined. Do not separate into sized fractions. Test the portion of the sample retained on the 4.75mm sieve only. Test as a single fraction and report a Percent Flat and Elongated particles on that basis.
For Type C and Type D Superpave Properties ASTM D4791 use a 5:1 ratio.

Report the result to the nearest 0.1%. The portal allows 2 decimals but only one is required.

TYPE D TESTS

ASTM C131: LOS ANGELES ABRASION

Carry out the test as outlined in the test procedure using Gradation B given in Table 1. Do Not Wash the sample before or after testing. Report the Loss to the nearest 0.1%. The portal allows 2 decimals but only one is required.

ASTM C127: RELATIVE DENSITY AND ABSORPTION OF COARSE AGGREGATE

Carry out the test as outlined in the test procedure. The mini-correlation sample size allows for duplicate testing. Report the Average Relative Density (OD) to three decimal places (0.001). Calculate and report the Average Percent Absorption and report to 2 decimal places (0.01%).

ASTM C128 RELATIVE DENSITY AND ABSORPTION OF FINE AGGREGATE,

Carry out the test as outlined in the test procedure. The mini-correlation sample size allows for duplicate testing. Remove the material finer than 75µm following the procedure in C 117 prior to testing. Saturate the test specimens from both samples by immersion in water for 24 ± 4 hours. Report the Average Relative Density (OD) to three decimal places (0.001). Calculate and report the Average Percent Absorption and report to 2 decimal places (0.01%).

ASTM D6928: MICRO-DEVAL ABRASION OF COARSE AGGREGATE

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

Run a control sample at the same time. Report your control sample tested (Drain Brothers or MTO RM CA2), and Loss to the nearest 0.1% in the comments section of the portal report.

ASTM D7428: MICRO-DEVAL ABRASION OF FINE AGGREGATE

Prepare the test specimen according to ASTM D7428 Section 8. Record the Test Sample Loss to the nearest 0.1%.

Run a control sample at the same time. Report your control sample tested (Sutherland Sand or MTO RM FA3), and Loss to the nearest 0.1% in the comments section of the portal report.

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 D7928/D6913: PARTICLE SIZE ANALYSIS OF SOILS

Prepare the test specimens in accordance with ASTM D7928. Use a freshly prepared dispersing agent with distilled water using 40 grams of sodium hexametaphosphate per litre of solution and ensure the pH value of the solution is adjusted to 8 or 9. The soil samples supplied should be dispersed in the stirring apparatus for 10 minutes.

Use the assumed value of 2.750 for the specific gravity of soil particles (DO NOT use the values determined by your lab). Upon completion of the test, compute Particle Diameter D to four significant digits (i.e., 0.0001), and report the Percent Passing the 2.0 mm, 425µm, 75µm, 20µm, 5µm and 2µm sieves to the nearest 0.1 percent. The portal allows 2 decimals but only one is required.

ASTM D4318: LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS

Determine the Liquid Limit, Plastic Limit and Plasticity Index of mini-correlation soil sample provided according to ASTM D 4318. Prepare the test specimens as outlined in Section 11.2 – Dry Preparation, and 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 %. The portal allows 2 decimals but only one is required.

ASTM D698: LABORATORY COMPACTION CHARACTERISTICS OF SOIL USING STANDARD EFFORT

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:

$C\rho d = (100\ \rho F\ GM)/(\rho F\ PC + GM\ PF)$

where:
Cρd = corrected dry density of the total material (combined finer and oversize fractions),
GM = bulk specific gravity,
ρF = 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 = 2.62, ρF = 2.250, PC = 12.2%, PF = 87.8%

$C\rho d = (100 \times 2.250 \times 2.62) / (2.250 \times 12.2 + 2.65 \times 87.8) = 2.289$

Report the maximum wet density in **t/m^3**, corrected maximum dry density in **t/m^3**, and corrected optimum moisture content in percentage. DO NOT REUSE THIS MATERIAL. (Note: t/m^3 = g/cm^3).
