

2023 BC, MB, NB, NL, NS, SK, PE 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, 2023** 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 14th. 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 2023 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.

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

Sample Preparation

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

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.

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. However, when reporting the % passing, use the value from the following table to reduce the % passing on each sieve by multiplying by the factor provided. 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%).

Mini sample year on label	Factor for original % passing the 4.75mm sieve. Multiply by
2022 and 2023	0.468

Example:

Sieve (mm)	Fine Aggregate % Passing of sample	Multiplication factor (%Passing 4.75mm)	Value to be reported in the portal report (% Passing of original)
2.36	77.7	0.491	38.1
1.18	58.2	0.491	28.6

ASTM C117: Wash Passing 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

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 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 for the whole sample. 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 of 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 overall weighed average 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 (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 75 μ m following the procedure in C 117 prior to testing. Saturate the test specimens from both samples by immersion in water for 24 \pm 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 (COARSE AGGREGATE)

Carry out the test as outlined in the test procedure. Prepare three fractions with the below mass for each fraction.

19.0 mm to 16.0 mm - 375 g

16.0 mm to 12.5 mm - 375 g

12.5 mm to 9.5 mm - 750 g

Recombine and test the 1500g sample in accordance with the test method. Report the mini-correlation test sample loss to the nearest 0.1%. The portal allows 2 decimals but only one is required.

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 LOSS OF FINE AGGREGATE,

Prepare 500 g test specimens from the mini-correlation samples according to the test method and the table below (section 8 of the standard).

Passing	Retained	Mass g
4.75	2.36	50
2.36	1.18	125
1.18	0.600	125
0.600	0.300	100
0.300	0.150	75
0.150	0.075	25

Report the mini-correlation sample loss to the nearest 0.1%.

Run a control sample at the same time. Report your laboratory control sample tested (Sutherland sand or James Dick) and Loss to the nearest 0.1%. The portal allows 2 decimals but only one is required.

ASTM C1252: UNCOMPACTED VOIDS

DO NOT use the specific gravity values determined by your lab. Use the value of 2.665.

AASHTO T176/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.

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 = 2.620

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:

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

where:

C_{pd} = corrected dry density of the total material (combined finer and oversize fractions),

GM = bulk specific gravity,

ρ_F = 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 $GM = 2.62$, $\rho_F = 2.250$, $PC = 12.2\%$, $PF = 87.8\%$

$$C_{pd} = (100 \times 2.250 \times 2.62) / (2.250 \times 12.2 + 2.65 \times 87.8) = 2.289$$

Report the maximum wet density in t/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).
