Laboratory Classifications

- Cement Producer 124
- Commercial 1,276
- Concrete Products 26
- Federal 6
- Miscellaneous 23
- Municipal 16
- State DOT 79
- School 3
- Number of Labs 1,553
Laboratories Inspected by CCRL on 37th Tour
Top 10 Additional Tests Requested

- **C78** (third point beams) 704
- **C42** (concrete cores) 431
- **C192** (making con specimens in the lab) 373
- **C1542** (measuring cores w/calipers) 332
- **C1019** (sampling/testing grout) 306
- **C780** (sampling/testing field mortar cubes) 216
- **C1314** (strength of masonry prisms) 141
- **C29** (unit weight of aggregate) 136
- **C174** (measuring thickness of con elements) 131
- **C157** (length change of con) 121
### Questions of Inspection:

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
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<tbody>
<tr>
<td>C1077 / R18: Are typical test reports available?</td>
<td>✔️</td>
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<td>C1077 / R18: Does the test report include the name of the laboratory issuing the report?</td>
<td>✔️</td>
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<td>C1077 / R18: Do the test reports indicate the test results?</td>
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<tr>
<td>C1077 / R18: Do the test reports include the standard test methods used?</td>
<td>✔️</td>
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<tr>
<td>R18: Do the test reports include the date of test performance?</td>
<td>✔️</td>
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### Footnotes

- The concrete test reports did not list the standard test methods 77, 77, and 77 as required by Section 9.4.6 of C1077 and Section 6.7.2.3 of AASHTO R18.
- The concrete test reports did not list the standard test methods used as required by Section 9.4.6 of C1077 and Section 6.7.2.3 of AASHTO R18.
- The final report listed both ASTM G67 and ASTM C1231, rather than clearly identifying which of the two standard methods was used in the testing. The writer of the report is not clear on this.
CCRL Reports New vs Old

New Report Format

April 11, 2015

Mr. Steve Small
Branch Manager
1927 Commercial Court, Suite D
Frederick, Maryland 21704

Subject: Inspection of Aggregate and Concrete.

Enclosed is a confirmatory report on Inspection V/3, which was completed in your testing laboratory at Frederick, Maryland, on March 30, 2015, by a representative of the Cement and Concrete Reference Laboratory.

This letter and the accompanying report, provides written evidence that your laboratory has been inspected during S7 inspection year.

Very truly yours,

Jan A. Pines
Director
Cement and Concrete Reference Laboratory

Enclosures

Old Report Format

July 22, 2015

Mr. Steve Small
Director, Materials & Pavement
Litte Department of Transportation
122 East 1st Street
Frederick, Maryland 21704

Subject: Inspection of Cement, Pozzolan, Concrete, Aggregate, and Reinforcing Bars Testing Laboratories

Enclosed is a confirmatory report on Inspection Number V/85, which was completed in your testing laboratory at Frederick, Maryland, on June 3, 2015, by representatives of the Cement and Concrete Reference Laboratory.

This letter and the accompanying report, provide written evidence that your laboratories have been inspected during the 37th inspection year.

Very truly yours,

Steven E. Lanker, P.E.
Director, Construction Materials Reference Laboratories
Cement and Concrete Reference Laboratory

Enclosures
CCRL Reports New vs Old

New Report Format

Old Report Format
CCRL Reports New vs Old

New Report Format

Old Report Format
CCRL Findings
Common Laboratory Footnotes
Common Quality System(s) Findings

- Maintenance records available for the moist storage facility (R18). – 30% passing for those labs with moist storage. For those with records, 71% had not performed maintenance every 12 months. (69% didn’t have all the required data on the records)

- Maintenance records available for sieve shakers (R18). 30% passing. For those with records, sieve shaker maintenance performed every 12 months (R18). 28% passing. (71% didn’t have all the required data on the records)

- Maintenance procedures available for sieve shakers (R18). 33% passing

- Maintenance procedures available for the moist storage facility (R18). – 33% passing for those labs with moist storage

- Verification records for the slump cones did not include all the required dimensional checks (C143-15a). – 35% passing

- Retaining rings (C1231) were not routinely verified at the required frequency. – 44% passing. (57% were verified within the past year of inspection date)

- Retaining rings (C1231) were not listed on the inventory list. - 45% passing (retaining rings only, neoprene pads are a consumable product)

- Water tank maintenance performed every 12 months (R18). 46% passing

- Maintenance records available for water tanks (R18). 51% passing (48% didn’t have all the required data on the records)
Common Quality System(s) Findings - cont.

- Planeness of the retaining rings (C1231) was not verified by the laboratory. – 56% passing Of that 56%, records were available 40% of the time, and 45% of records were missing all required information.

- Maintenance procedures available for water tanks (R18). – 56% passing for those labs with water storage tanks

- Written procedure for verifying retaining ring planeness and compression machine bearing block planeness (R18). – 59% passing

- All in-service pressure air meters (C231) were not routinely standardized at the required frequency. – 63% passing (80% of meters were checked within 3 months of inspection date)

- All in-service slump cones were not routinely verified at the required frequency. – 67% passing (83% were verified within the past year of inspection date)

- All in-service unit weight measures (C138) were not routinely standardized at the required frequency. – 69% passing (22% did not have the correct volume listed)

- Pressure air meter (C231) standardization records having all the required information. – 70% passing

- Calibration or verification is done in-house, is documentation which establish traceability of scales/balances. – 74% passing

- Calibration or verification is done in-house, is documentation which establish traceability of calipers for checking dimensions. – 77% passing
Common Concrete Findings

• Strike off procedure for unit weight measure (C138). — 67% passing (88% weighed the measure prior to the filling operation)

• Upper spherically seated bearing block of compression testing machine found cleaned and lubricated with oil when disassembled during onsite visit (C39). — 74% passing (85% had maintenance records for cleaning and oiling — C39)

• Pressure air meter procedure, general operation from clamping top portion to reading gage (C231). - 74% passing

• Pre capping check procedures for bonded cylinder caps (C617). — 77% passing

• Reading procedures for the volumetric air content (C173). - 78% passing

• A written listing of aggregate correction factors for the pressure air meters (C231). — 78% passing

• Cylinder checked for alignment in testing machine with initial load applied when using unbonded caps (C39 formerly C1231 requirement). — 79% passing

• Beam consolidated properly during fabrication when using rodding procedure (C31). — 79% passing (vibration method was 96% passing)

• Cylinder pre break checks when using unbonded caps (C1231). - 83% passing
Common Aggregate Findings

- Decanting procedure for the minus no. 200 sieve test (C117). – 78% passing
- Pycnometer procedure for the specific gravity of fine aggregate (C128). – 78% passing
- SSD procedure for the specific gravity of fine aggregate (C128). – 88% passing
- Aggregate sieve screen/cloth loose or wavy in frame (E11). – 90% passing
- Sample preparation procedure for the specific gravity of fine aggregate (C128). – 91% passing
- Sieves overloaded during sieve analysis procedure (C136). – 92% passing
- Aggregate scale/balance accuracy (equipment). – 93% passing
- Correct order of sample weighings for the specific gravity of coarse aggregate (C127). – 94% passing
- Sample splitter feeder and chute width for fine/coarse aggregate (C702). – 94% passing
Questions